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THE L.C.C. PLAN FOR LONDON

IT is gratifying to know that the London County Council is taking steps to make a start on the comprehensive schemes for improvement set out in the plan prepared in 1943 by Professor Abercrombie and Mr. Forshaw.* The report now issued by the Town Planning Committee to the Council follows this plan very closely, but also aims at defining the order of precedence to which the various proposals must conform. It was indicated in the original report that they represented a long term policy and it is therefore important to make decisions as to their relative position in the programme regarded as a series of steps towards an ultimate goal.

In the first place it is pointed out that the Council, as a planning authority, has not yet adequate powers to facilitate large scale reconstruction for such a built-up area as the County of London. "Neither the important subject of compensation for planning control nor the twin subject of betterment, both of which were dealt with in the Government White Paper on the Control of Land use, issued in June, 1944, have yet been included in new legislation. The town planning machinery laid down in the Town and Country Planning Act, 1932, is still substantially unamended. The procedure for making a statutory scheme under that Act is cumbrous and lengthy, and quite unsuitable for meeting London's replanning and reconstruction problems." Pre-war schemes would require drastic amendments to make them accord with the present plan, and it would be difficult to arrive at the requisite detailed conclusions.

Nevertheless it is recommended that major decisions in principle should be adopted as a guide for works of redevelopment, without waiting for the necessary amendments to the Act of 1932. For example, a town planning scheme indicates the policy as to the forms of development to be allowed in particular zones and on specific sites, thus controlling land use; it also defines the intentions of the authority as to particular works or projects which it designs to carry out itself, such as the construction of new roads, the improvement of existing roads, housing operations, the provision of open spaces and development of other kinds. In this case, unless such works are safeguarded, the land required will almost certainly be developed in a way which would prejudice the Council's projects; it is therefore regarded as necessary to define the main principles to be followed both in regard to the control of land and the projected works to be carried out.

The four major existing defects set out in the 1943 report are (1) congestion of traffic, (2) depressed housing, (3) intermingling of housing and industry, and (4) lack and mal-distribution of open space. These are reviewed on the basis of the recommendations in the report, but it is recognised that final decisions as to what it may be possible to do and when it can be done cannot be made at the present moment in view of the uncertainty as to labour and costs. Starting with the plan for roads it is advised that schemes to the value of 15 million pounds (at 1939 prices) should be regarded as the short term programme, and that the remainder would follow at more distant dates. The road plan is affected by the view that the spaces between the main arteries are to be regarded as far as possible as "precincts," mention being made of the importance of this in the case of the Government centre at Westminster and the University one in Bloomsbury. The re-locating of Covent Garden and Borough Market is also referred to as an element in this problem.

Housing densities come next under review—200 persons per acre being accepted for the West End, 136 for a belt encircling this on the North, East and South, with 100 for the remainder of the L.C.C. area. It is mainly in the intermediate belt that the shortage of public open space is most marked, while the higher densities can only be satisfied by a general or partial adoption of housing in flats. The arrangement suggested of alternating flat dwellings with small scale houses would, unless district heating was adopted, have the disadvantage to the upper flats of their exposure to the smoke from the chimneys at a lower level; this mixed development has been rather overdone.

The community structure of the borough and other groupings that make up London as a whole, which were indicated in the original plan and were a more definite feature of the R.I.B.A. plan, are still further emphasised in the present report as offering the economical provision of services and the elimination of waste and overlapping in communal facilities; it is suggested that each of these should contain from 60,000 to 100,000 persons.

Industrial location presents problems of great difficulty in rearrangements not unduly disturbing production, and it is thought that these can only be handled nationally with assistance from local authorities. The tendency would be to shift the larger industries to groups near the outer zone of the London area and to provide flatted factories with power facilities for the smaller ones. Of course, proximity to the riverside, docks and canals must have consideration in the provision of industrial sites.

The original scheme laid down seven acres as the desirable allowance of public open space per 1,000 people of which it advised that four acres might be managed within the London County area, but the cost of this would be so heavy that it is now felt that for the present some 2½ acres must be accepted as a minimum, with the hope of increasing this later. As regards the possibilities here, criticism is handicapped by the lack of a survey indicating the areas of war destruction. The extent of this in Stepney and Poplar is indicated by the reference to these as demanding a high degree of priority for reconstruction, but the position elsewhere is not so clearly defined.

From the financial aspect it is regarded as essential that a substantial increase of assistance will be needed from the National Government, if the contemplated remodelling is to be made possible. Other difficulties remain to be resolved, but in their effort to establish the essential principles on which to launch a sustained assault upon the immense task which confronts them in guiding the physical development of our Metropolis the Council have, it is believed, the sympathy and affection of the whole British people.

* *The Builder*, July 16, 1943.

NOTES AND NEWS

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Post-War Employment: R.I.B.A. Index.

THE R.I.B.A. Card Index is now available for use in connection with post-war employment, and the Institute will welcome notifications of architectural vacancies of every kind.

The card index has been compiled from the information received on questionnaires "A" and "B" which the architectural profession generally has completed and sent in to the Institute. In addition to the names of architects fully qualified as Fellows, Associates or Licentiates of the R.I.B.A., or otherwise, who require responsible posts, the index contains particulars of Students and Probationers of the R.I.B.A. and others who are seeking posts as assistants.

Inquiries should be sent to the Secretary, R.I.B.A., 66, Portland-place, London, W.1, giving a description of the vacant post, with details of the age and salary range, the locality of employment, and particulars of such qualifications and special experience as may be considered essential. The R.I.B.A. will then put intending employers into touch with suitable applicants who are immediately or about to become available for employment.

Code for Measurement of Small Houses.

THE Chartered Surveyors' Institution and the National Federation of Building Trades Employers decided, early in 1944, to explore the possibility of evolving some simpler method of measurement for the superstructures of small dwelling-houses, a decision which proved to be in line with the Report of the Central Council of Works and Buildings, issued in November, 1944. A special Joint Committee has now completed its work, and a "Code for the Measurement of Building Work in Small Dwelling-Houses" has been prepared which has received the approval of the two bodies.

The Joint Committee for the Standard Method of Measurement of Building Works has accepted responsibility for the issue of the document, and copies will be obtainable at the price of five shillings post free from the Chartered Surveyors' Institution, 12, Great George-street, Westminster, S.W.1. It is expected that the document will be available in the middle of August. Meantime, for those who may need them urgently, a limited number of printed final drafts are available on application to the Chartered Surveyors' Institution, price five shillings. These preliminary copies can be exchanged without further charge for bound copies when they become available.

L.M.B.A. Honour National President.

A DINNER in honour of the President of the National Federation of Building Trades Employers, Mr. G. W. Buchanan, F.I.O.B., was given by the Council of the London Master Builders' Association on Tuesday evening at the Dorchester Hotel, Park-lane, Mr. J. S. Galbraith, President of the Association, being in the chair. Those present included the Presidents of the Regional Associations of the Federation and the members of Council of the L.M.B.A., all with their ladies. Speeches were therefore commendably brief. The Chairman read a letter from Mr. Duncan Sandys paying tribute to the work done by the guest-of-honour, who, the speaker reminded the company, was doing a seven-day-a-week job not only for the Federation but for the building industry of Great Britain. In response, Mr. Buchanan expressed thanks for the honour which had been done him in a witty speech. He had been told by his wife, he said, that the only after-dinner speech the ladies wished to hear was: "Can I wash-up, dear?" Mr. Harland proposed the health of "The Ladies," to which Mrs. Leslie Wallis responded. Mr. Robert Easton sang, and a delightful evening, a forerunner, it may be hoped, of many to come, was with difficulty broken up at an advanced hour.

Southampton Borough Architect.

SOUTHAMPTON County Borough invite applications for the post of Borough Architect. Salary £1,250 per annum, rising to £1,500. Details will be found elsewhere in this issue.

Visit of Brazilian Woman Architect.

MADAME CARMEN PORTINHO, one of the foremost women architects and town planners in Brazil, is in this country on a three months' visit, arranged by the British Council. Madame Portinho, who is on the staff of the University of Brazil, is here to make a special study of reconstruction and town planning.

A.A. Leverhulme Scholarship.

THE Leverhulme Scholarship, tenable at the Architectural Association School of Architecture, value £1,000, which includes payment of fees and maintenance for a period of five years, has been awarded this year to Mr. William J. G. Godwin, of Coulsdon, Surrey.

Berks, Bucks and Oxon A.A.

MR. J. T. SAUNDERS, F.R.I.B.A., has retired from the presidency of the Berks, Bucks and Oxon Architectural Association, and Mr. W. J. Freeman, A.R.I.B.A., has retired from the hon. secretaryship. The new president is Mr. R. G. Brocklehurst, F.R.I.B.A., F.S.I., and the hon. secretary Mr. Colin Cooper, A.R.I.B.A.

Well-walk, Hampstead.

HAMPSTEAD Borough Council has been informed that the Minister of Health has decided to confirm the New End-square and Well-walk compulsory purchase order of 1944. Sixty working-class flats are to be built on the site, with due regard to the preservation of existing amenities, and in satisfactory relation to Burgh House, a Queen Anne "gem" hidden from Well-walk by two modern houses, which are now to be demolished.

South-Eastern Architects.

MR. HAROLD ANDERSON, F.R.I.B.A., of Canterbury, has been elected President of the South-Eastern Society of Architects.

London Rotary.

AN interesting souvenir of Mr. W. E. Rice's term of presidency of the London Rotary Club has been issued as a supplement to the *London Rotarian*. It includes portraits of some of the distinguished speakers, including many Ministers of State, who addressed London Rotary at their Wednesday lunches during 1944-45. The club and its immediate Past-President, Mr. Rice, are to be congratulated on providing a platform for so many well-known and responsible personalities during the memorable last year of the war in Europe.

West Cumberland Development Area.

THE Minister of Town and Country Planning (Mr. W. S. Morrison) has appointed Mr. R. H. Mattocks, P-P.T.P.I., and Mr. J. S. Allen, M.T.P.I., A.R.I.B.A., to prepare an outline plan and report for the West Cumberland Development Area. Mr. Morrison has had under consideration the planning of this area, and particularly as a development area in the light of the Distribution of Industry Act.

Edinburgh Planning Appointments.

EDINBURGH TOWN COUNCIL have appointed Mr. Derek Plumstead, A.R.I.B.A., London, as Planning Officer on a temporary basis at an annual inclusive salary of £1,000, and also Professor Sir Patrick Abercrombie as Planning Consultant at a fee of £2,000. After considerable discussion there was unanimous agreement that the Planning Officer should administratively be subject to the City Engineer.

Appointment.

SIR JOHN BROWN AND HENSON, FF.R.I.B.A., have been appointed architects for housing for Eton R.D.C.

Professional Announcements.

MESSRS. ROBERT HENING AND ANTHONY M. CHITTY, M.A., F.R.I.B.A., A.M.T.P.I., have reopened a London office, as from July 15, at 20, Gower-street, W.C.1. (Tel. : Museum 8575.)

MAJOR W. S. MAY, R.E., F.S.I., having been released from the Army, has resumed practice as quantity surveyor. The name and address of the firm remains as before, May and May, 9, New-square, Lincoln's Inn, W.C.2.

MESSRS. SILK AND FRAZIER, FF.S.I., chartered quantity surveyors, have reopened their Coventry office at 6, The Quadrant, Coventry, with Mr. H. J. Matthews, P.A.S.I., in charge, and will be pleased to receive trade circulars and catalogues.

COMING EVENTS

Monday, July 23.

CEMENT AND CONCRETE ASSOCIATION. Exhibition of Designs in Concrete Fencing Competition. At Royal Society of Arts, Adelphi, W.C.2. (Open until August 3.)

Tuesday, July 24.

HOUSING CENTRE. Miss Jacqueline Tyrwhitt on "A Planning Tour in Canada." 13, Suffolk-street, S.W.1. 1.15 p.m.

Thursday, July 26.

SOUTH WALES FEDERATION OF B.T.E. Half-yearly meeting. Cardiff.

From *The Builder* of 1845.

Saturday, July 19, 1845.

AT Cologne, the money required for the restoration of the cathedral is immense.—*From a leading article pressing the calls of restoration work on famous British and Continental buildings.*

*** It is to be noted how history persists in repeating itself. A correspondent writes this week from Germany to say that Cologne Cathedral, so far from being undamaged by bombing, "will take at least 20 years to restore, and is a mere shell unsafe to enter."

APPLICATION OF CIVIL ENGINEERING METHODS TO BUILDING CONSTRUCTION

PRECAST REINFORCED CONCRETE FRAMEWORK UNITS.

SINCE the establishment of a Department of Scientific Research in the Ministry of Works, under the direction of Sir Reginald Stradling, a good deal of promising research work has been undertaken. A subject now under close investigation is the application of civil engineering methods to building construction. In particular, a system embodying the use of pre-cast reinforced concrete framework units for assembly in multi-storey buildings has been developed by Professor A. L. L. Baker, with the assistance of Mr. V. G. Hatherley. This is shown in the accompanying illustrations. It should be emphasised that the Ministry of Works is not necessarily committed to the practical application of any of the results of research carried out under its ægis, but has no objection to investigations being placed on record.

Cast-in-situ Methods.

Cast-in-situ methods of construction are invariably employed in more dependable climates of South Africa and certain parts of the United States, but in this country a large area of freshly cast concrete flooring can be seriously damaged by heavy rainfall or in the winter months by frost. Attempts are therefore being made to produce methods of construction which will overcome these difficulties and also at the same time reduce the amount of site labour required to a minimum.

Schemes have been investigated of multi-storey buildings divided into reinforced concrete units weighing from three to five tons, each of which could be precast under cover and lifted into position by specially designed large cranes. Floors covering the area of a large room would be cast and erected in one unit, and similarly large sections of the walls and building frame, so that the complete shell of a ten-storey building could be erected in a few weeks with only a small gang of men, helped by a large crane.

Many problems of design have had to be investigated in order to ensure that the strength of such buildings would be equal to similar structures cast *in situ* and new types of joints devised to ensure precision in erection, simplicity, and a minimum amount of site work. These projects are just emerging from the research stage, and comparisons with generally accepted methods of construction from the point of view of the amount of site labour involved and the total cost are being made with the help of contractors experienced in heavy erection problems.

It is expected that this research will establish the practicability of new methods of construction in reinforced concrete employing heavy plant on a large scale so that reconstruction of congested areas can proceed at great speed with several multi-storey buildings going up simultaneously, each fed from a common precasting factory with a continuous supply of large standard units.

The standard unit of construction for a house is a brick, and there is no limit to the variety of architectural design. In the same way with large-scale multi-storey building projects, the standard unit can be a section of wall or building frame without the architect's scope being seriously restricted.

The investigation of framed buildings with small and irregular floor spans has almost reached a stage at which inquiries could be sent to reinforced concrete specialist contractors accustomed to quote on scheme drawings. Various alternative methods of erection have been proposed which include the use of stationary derricks with very long jibs, a special type of travelling crane, and also light cranes which would use the building itself as the work proceeded, as supporting staging.

In a preliminary way these methods have also been investigated for use in long-span construction such as a multi-storey factory.

It is hoped that it will be possible to devise economic ways of erecting precast mushroom systems in this respect and also large slab and beam systems supported on cruciform stanchions.

Precision Erection in Multi-storey Buildings.

It should be possible to ensure precision in erection with the same degree of accuracy as in the case of structural steel, provided suitable joints are used. It is suggested that dome-shaped bearing points are cast in the main frames to ensure that each vertical member is the correct height between bearing points, that they are accurately spaced horizontally, and are all at the same level.

Two possible procedures are suggested for erecting the frames :—

(1) Erection would commence at the extremities of the wings of the buildings and each frame be adjusted by screwed tie-rods to a truly vertical position as erection proceeded towards the centre of the building. Flooring units would be dropped between the frames as erection proceeded. They would be precast with sufficient clearance to ensure that there would be no difficulty in lowering them between the vertical frames on to their supports with the help of guides.

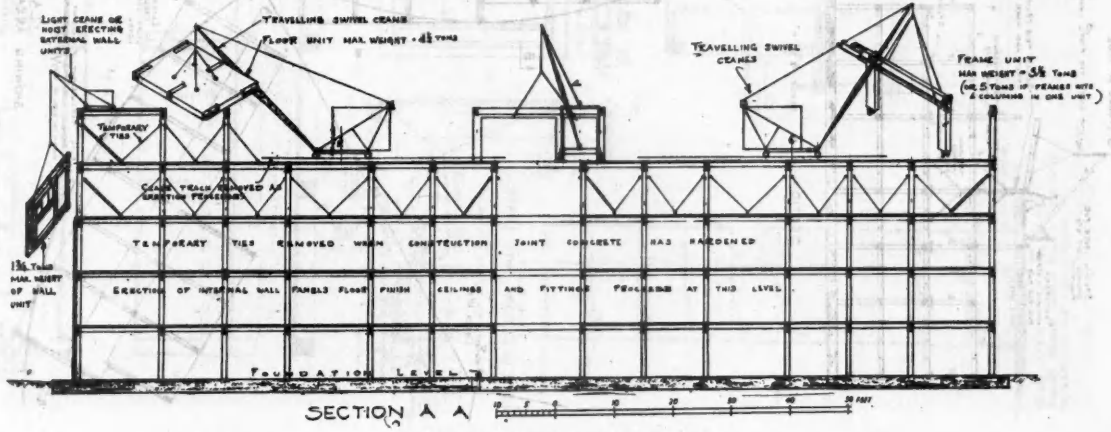
(2) On each floor the central frame of each wing of the building would be erected first and strutted in a truly vertical position with tubular scaffolding units. The remaining frames and flooring units would then be pulled towards the centre by drawscrews. Any error in the length of the flooring units would only throw the outside columns a negligible amount out of the vertical position.

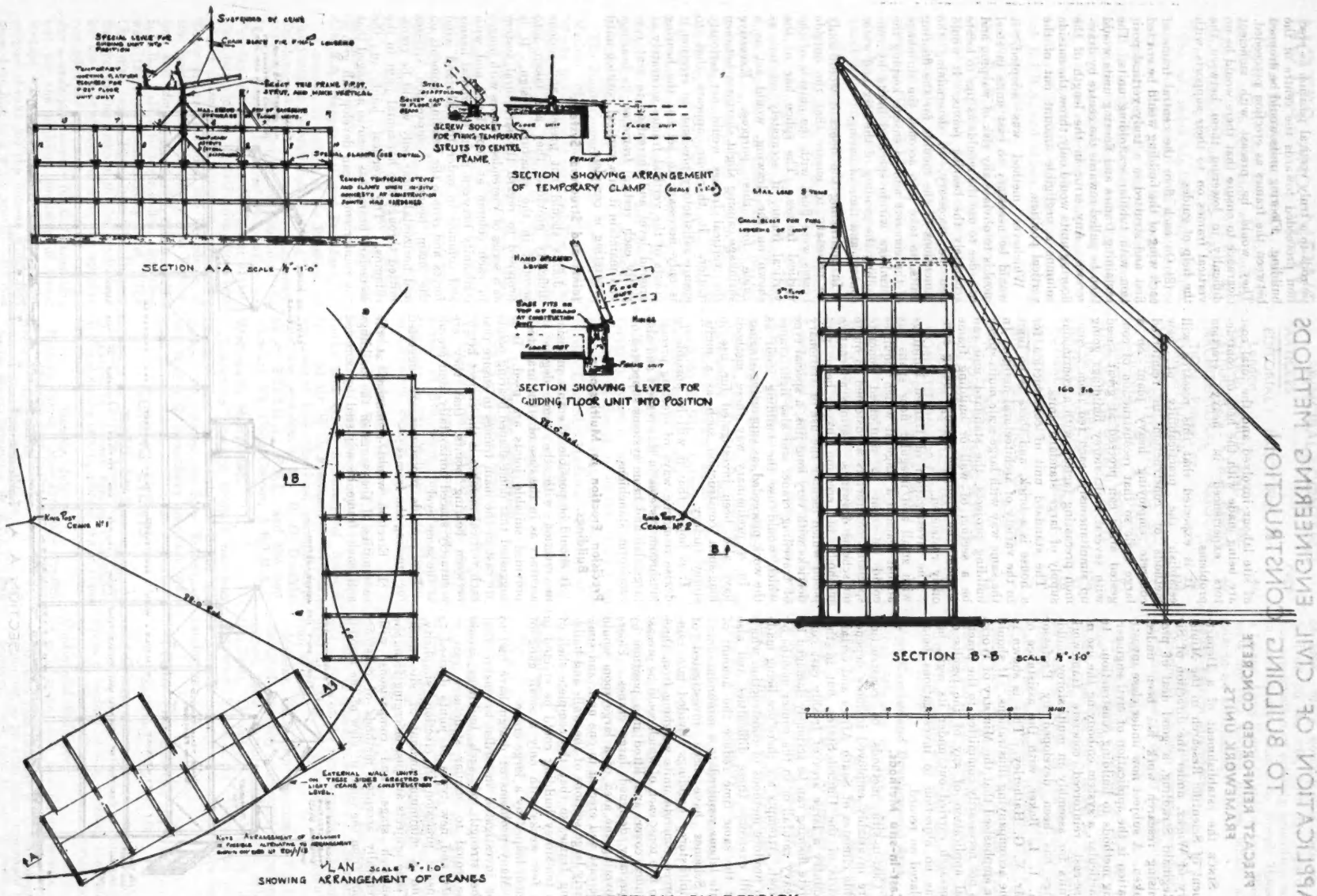
Whichever method was adopted, it would be necessary to cast units in steel moulds to obviate any risk of warping and in order to use the moulds as jigs to locate accurately the bearing points. It would also be necessary, in determining the dimensions of the moulds for the flooring units, to take into account the shrinkage of the concrete and to ensure keeping the shrinkage within specified limits by controlling the grading of the mix and water content and time of curing.

In positioning the floors it would only be necessary to ensure that the outside beams were flush with the outside of the vertical frames. The splice bar of the vertical frame, if accurately set out as shown on the drawing, would act as a guide for this purpose. Excessive shrinkage causing slight shortness between the vertical frames would not seriously matter. It therefore appears that to ensure satisfactory precision in erection it is only necessary to set out the bearing points of the vertical frames accurately at ground level and thereafter to seat correctly each vertical frame on its bearings and maintain it in a vertical position until concreting is complete.

Joints and Structural System.

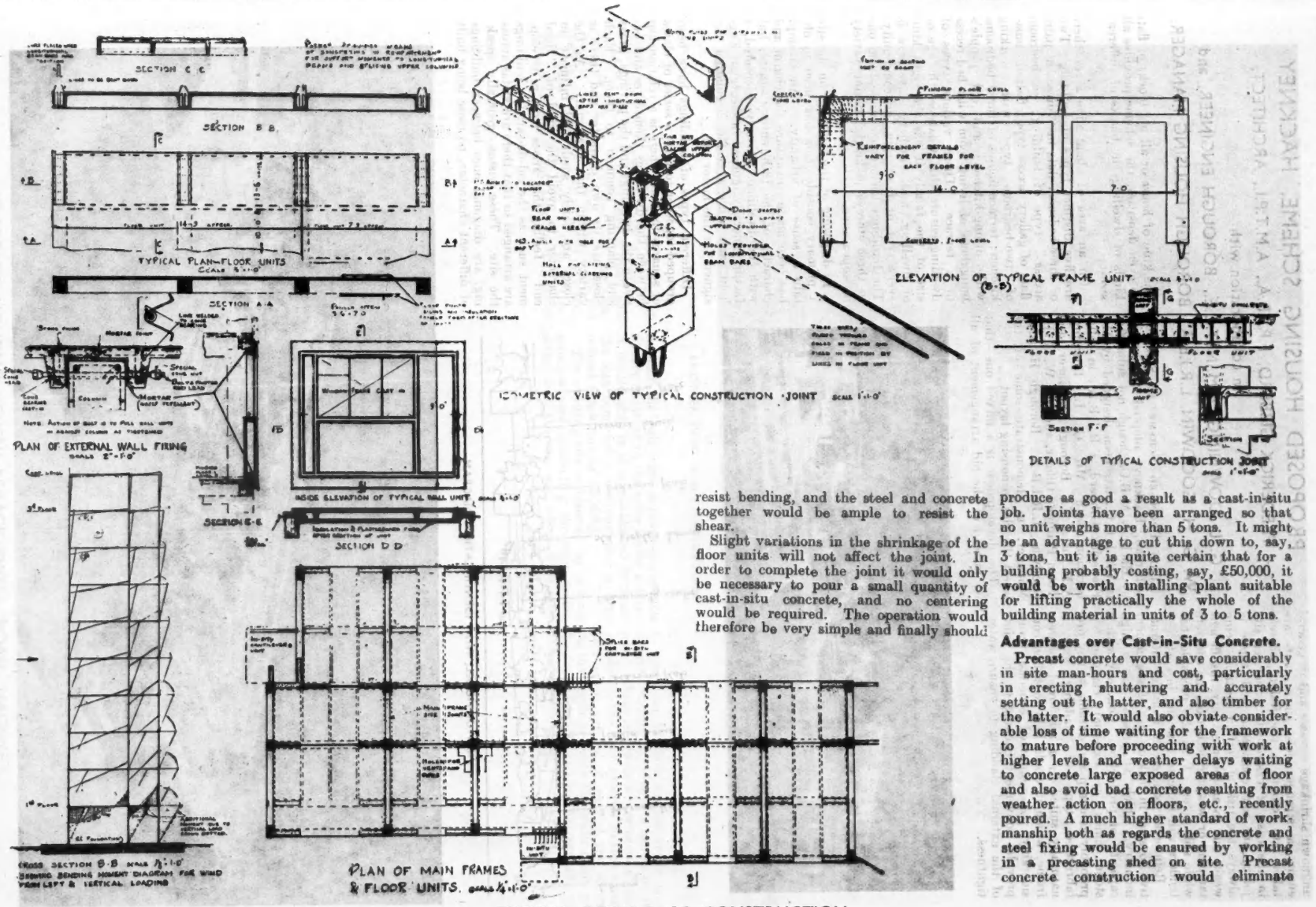
Joints should not present any serious difficulty provided they are taken into account in the structural design. It is proposed to regard the structural system as a series of Vierendeel frames with hinges in each column at floor level, and with continuity between main horizontal beams and columns in order to withstand wind forces and reduce the bending moments on the main beams. Compression stresses and horizontal shear only would be transmitted through the horizontal joint in the columns. The vertical joint in the secondary beams has been so arranged that the reinforcement can develop full grip to


LIGHT CRANE OR HOIST ERECTING EXTERNAL WALL UNITS
TRAVELLING SWIVEL CRANE
FLOOR UNIT MAX. WEIGHT - 4½ TONS
TRAVELLING SWIVEL CRANES
FRAME UNIT MAX WEIGHT = 3½ TONS
TEMPORARY TIES
TEMPORARY TIES REMOVED WHEN CONSTRUCTION JOINT CONCRETE HAS HARDENED
ERECTION OF INTERNAL WALL PANELS FLOOR FINISH CEILINGS AND FITTINGS PROCEEDS AT THIS LEVEL
FOUNDATION LEVEL
SECTION A A
ERECTION WITH LIGHT CRANES.


SECTION A-A SCALE ¼"-1'0"
SECTION SHOWING ARRANGEMENT OF TEMPORARY CLAMP (SCALE 1"-1'0")
SECTION SHOWING LEVER FOR GUIDING FLOOR UNIT INTO POSITION
SECTION B-B SCALE ¼"-1'0"
PLAN SCALE ¼"-1'0"
SHOWING ARRANGEMENT OF CRANES

ERECTION BY DERRICK.

APPLICATION OF CIVIL ENGINEERING METHODS TO BUILDING CONSTRUCTION


SECTION C C
SECTION B B
TYPICAL PLAN—FLOOR UNITS
SECTION A A
PLAN OF EXTERNAL WALL FIRING
SECTION E-E
INSIDE ELEVATION OF TYPICAL WALL UNIT
SECTION D D
ISOMETRIC VIEW OF TYPICAL CONSTRUCTION JOINT
ELEVATION OF TYPICAL FRAME UNIT (B-B)
DETAILS OF TYPICAL CONSTRUCTION JOINT
PLAN OF MAIN FRAMES & FLOOR UNITS.

TYPICAL DETAILS OF CONSTRUCTION.

resist bending, and the steel and concrete together would be ample to resist the shear.

Slight variations in the shrinkage of the floor units will not affect the joint. In order to complete the joint it would only be necessary to pour a small quantity of cast-in-situ concrete, and no centering would be required. The operation would therefore be very simple and finally should produce as good a result as a cast-in-situ job. Joints have been arranged so that no unit weighs more than 5 tons. It might be an advantage to cut this down to, say, 3 tons, but it is quite certain that for a building probably costing, say, £50,000, it would be worth installing plant suitable for lifting practically the whole of the building material in units of 3 to 5 tons.

Advantages over Cast-in-Situ Concrete.

Precast concrete would save considerably in site man-hours and cost, particularly in erecting shuttering and accurately setting out the latter, and also timber for the latter. It would also obviate considerable loss of time waiting for the framework to mature before proceeding with work at higher levels and weather delays waiting to concrete large exposed areas of floor and also avoid bad concrete resulting from weather action on floors, etc., recently poured. A much higher standard of workmanship both as regards the concrete and steel fixing would be ensured by working in a precasting shed on site. Precast concrete construction would eliminate

unknown shrinkage stresses and in general ensure a stronger job, since joints are taken into account in the design, whereas in the case of cast-in-situ concrete, site joints are not considered and there is always the risk of certain sections being weak, due to an incorrect mix, insufficient tamping or weather action on the concrete while still green. It is also probable that tenders will indicate a saving in cost.

Reinforced concrete is a useful alternative to steel in making use of the cement industry, which at present has a high capacity of production. Concrete with a stone finish as external cladding is probably as cheap and durable as any prefabricated type of cladding and is naturally suited to a reinforced concrete frame, which it would help to stiffen considerably. A reinforced concrete frame provides convenient backing to the joints of the external cladding to ensure watertightness.

PROPOSED HOUSING SCHEME, HACKNEY

FREDERICK GIBBERD, F.R.I.B.A., A.M.T.P.I., ARCHITECT,

in collaboration with

G. L. DOWNING, A.M.INST.C.E., BOROUGH ENGINEER, and W. G. H. GOODWIN, L.R.I.B.A., BOROUGH HOUSING MANAGER.

THIS PROPOSED SCHEME AT SHACKLEWELL-ROAD, Hackney, adopted in principle by Hackney M.B.C. though not submitted to the L.C.C., has been designed by Mr. Frederick Gibberd, F.R.I.B.A., in collaboration with Mr. G. L. Downing, A.M.Inst.C.E., Borough Engineer and Town Planning Officer, and Mr. W. G. H. Goodwin, L.R.I.B A., Borough Housing Manager, to demonstrate some of the latest theories in housing layout.

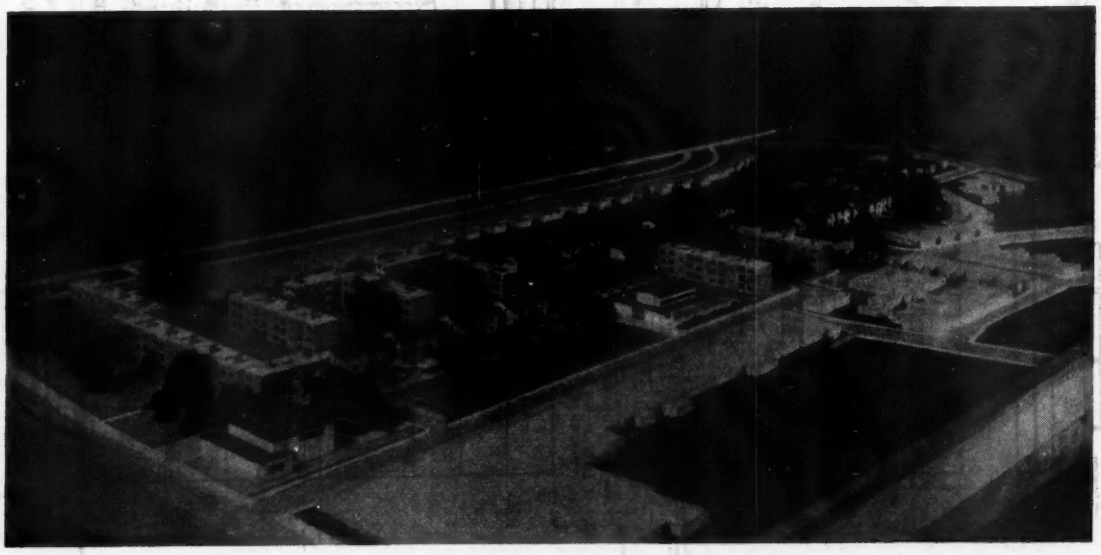
The development is a mixed one—that is, instead of the old arrangement of all one kind of house or all big blocks of flats to even densities, the scheme provides all kinds of dwellings in blocks of different sizes.

On an area of about nine acres there are five distinct types of building: Two or three-bedroom flats in "direct in pairs access" type of building; one-bedroom flats of gallery access type; flatted houses of two-bedroom type with working kitchen; terrace houses of three bedrooms with dining-kitchen; and old people's bungalows of living-room with bed-recess in a terrace. These various types of dwelling ensure that whatever the age or size of the family it has the right kind of dwelling, and, further, that there is every type of family in the community. The buildings themselves range from one to three storeys in height, giving variety in appearance.

In disposing of the buildings on the site a primary consideration has been to obtain a sense of urbanity. An attempt has been made to capture the charm and character of the 18th-century square, but with the dwellings properly orientated, a factor generally ignored in Georgian England, and with a traffic circulation designed for the motor car.

Different types of buildings have been grouped together to form a series of closes or squares in which there is a relationship between the dwellings themselves and between the dwellings and the pavings, grass and planting common to them. Each close has its own character and there is variety within that character. As the closes are fairly small and intimate in character to avoid the kind of "dead end" feeling that arises from a development such as the cul-de-sac, the buildings are arranged so that there are vistas across the site. These vistas, generally speaking, are diagonal ones between buildings of different character, no close being built

VIEW OF MODEL, WITH IDENTIFICATION DIAGRAM.



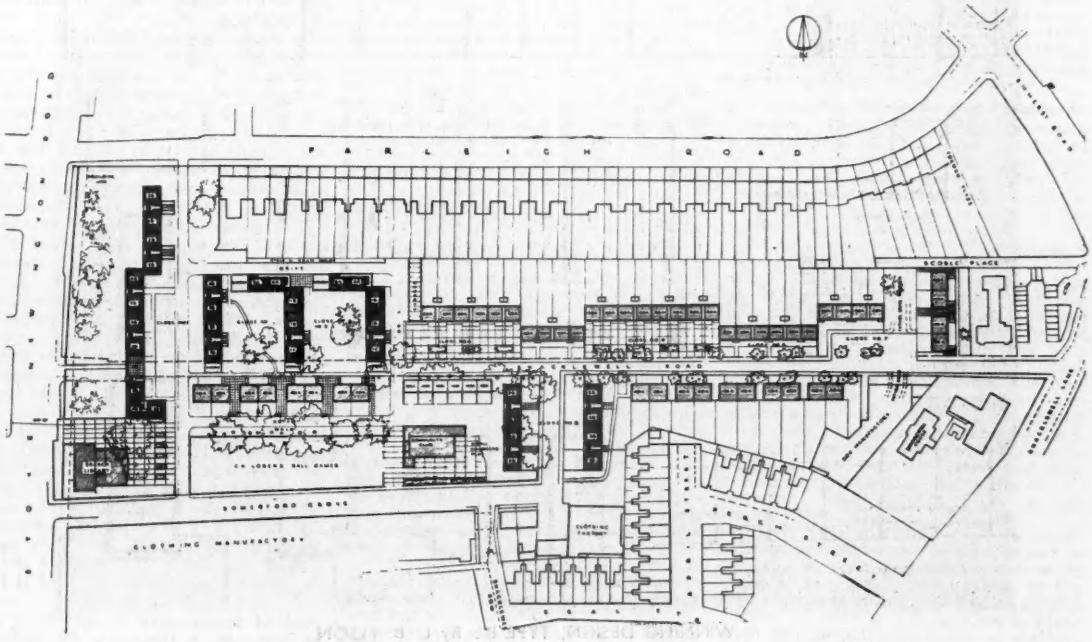
ANOTHER VIEW OF THE MODEL.

ANOTHER VIEW. *Below*: THE SITE PLAN.

up into the solid square and no group of buildings being symmetrically disposed.

In the heart of the scheme a small hall and laundry are provided for the community. Adjacent to this and to the old people's houses are a terrace and play area for very small children. A long tree-lined walk and a play area for ball games connect the hall with a proposed branch library adjacent to the main traffic artery. A relationship is thus established between the site community building and a prominent neighbouring building.

The existing site is bisected by a long straight road connecting the main traffic arteries on the east and west. This road is closed on one side so that traffic is no longer tempted to cross the centre of the site. There is provision for service roads parallel to the main arteries so that should it ever be desired to extend the scheme to the north or south the main roads will be free of traffic intersection and the site free of cross traffic.



PROPOSED HOUSING SCHEME, SHACKLEWELL ROAD, HACKNEY.

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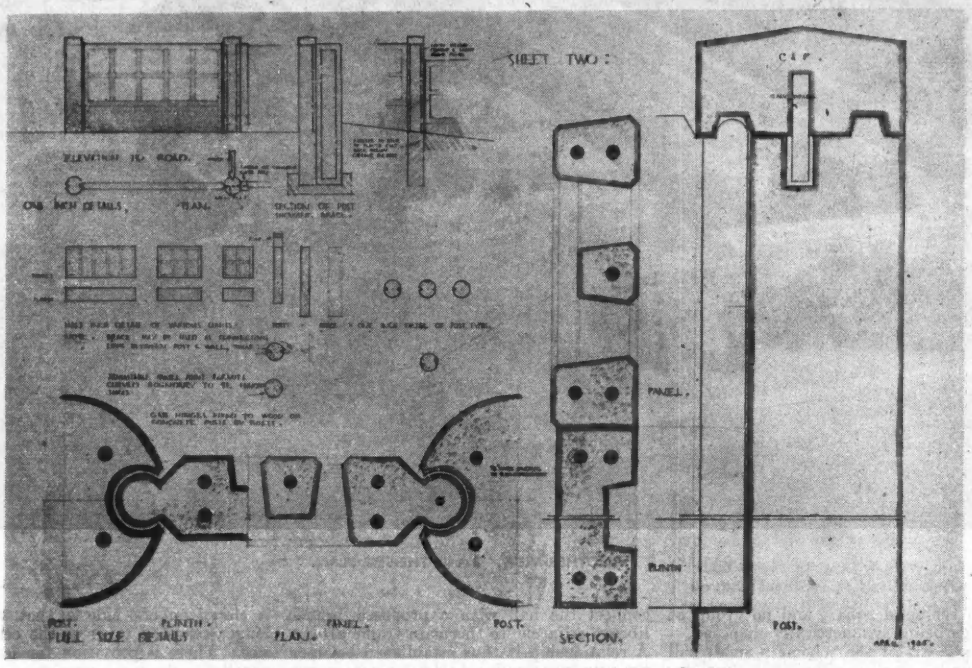
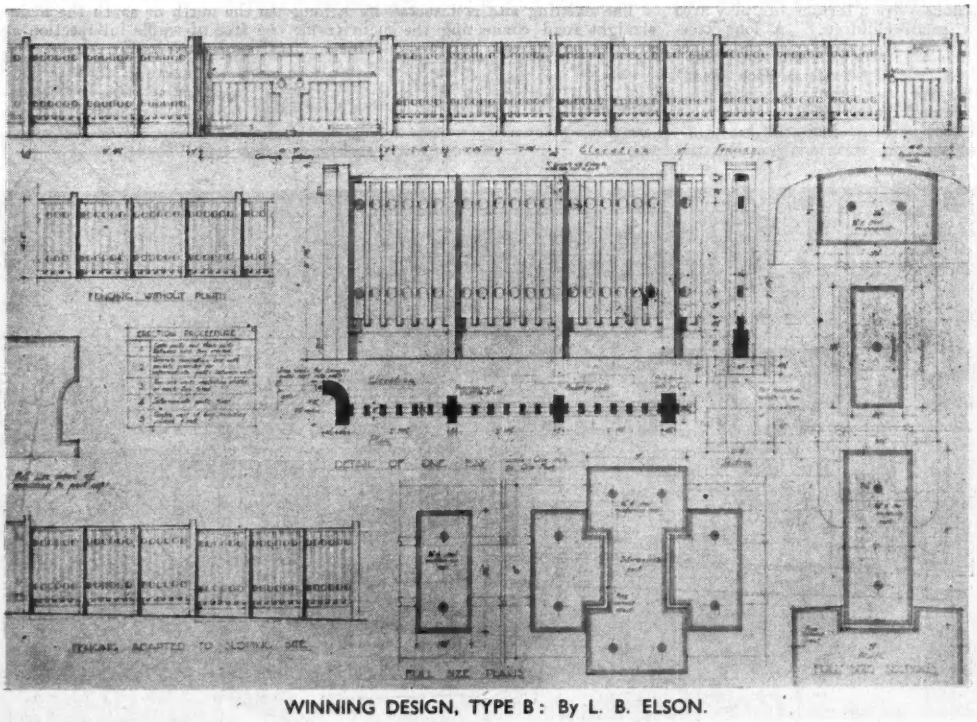


WINNING DESIGN, TYPE A: By G. H. BEECH, A.R.I.B.A.



WINNING DESIGN, TYPE B: By L. B. ELSON.

COMPETITION FOR DESIGNS FOR OPEN TYPE CONCRETE FENCES. (See facing page.)

COMPETITION NEWS

Designs for Open-type Concrete Fences.

THE Cement and Concrete Association has offered premiums for design of open-type concrete fences, and the Royal Society of Arts has prepared conditions and conducted the competition. Designs were invited for two types of fencing :—

Type A, approximately 1 ft. 9 in. high, for enclosing front gardens and demarking boundaries of housing schemes, etc. ;

Type B, approximately 4 ft. 6 in. high, for the protection of property, parks, open spaces, etc.

To each type of fence provision was to be made for the addition of a plinth approximately 9 in. high to enable the height to be increased when required. There were 147 competitors, of whom five were disqualified for contravening the conditions by disclosing their name. In all, 206 designs were submitted, 124 for type A, 82 for type B. The assessors, Messrs. Oswald P. Milne, Charles Holden and A. G. Bray, have made the following award :—

Type A.—1st premium, £50, G. H. Beech, A.R.I.B.A. ; 2nd, £25, K. A. Lloyd, A.R.I.B.A., and G. A. G. Miller, A.R.I.B.A. (joint entry) ; 3rd, £10, L. W. Ashurst, A.M.I.Struct.E., A.M.T.P.I.

Type B.—1st, premium £50, L. B. Elson ; 2nd, £25, S. H. Smith, A.R.I.B.A. ; 3rd, £10, C. T. Ayerst, A.R.I.B.A.

The first design in each group is illustrated on facing page.

The subject of the competition, though appearing simple, involves a number of points in design, both æsthetic and practical. Fencing should be restrained and not over-elaborate in appearance, and should be of good effect when in continuous lengths. Component parts should be convenient to manufacture, transport and erect at the site. Designs should be suitable for manufacture in concrete and should express the nature of the material. The common post and panel system of construction has been adopted by most of the competitors ; some designs follow different lines and exhibit ingenuity in diverging from usual forms. Many competitors have omitted to give due regard to practical considerations, of which convenience in moulding and handling and the allowance for clearances might be mentioned.

In the opinion of the assessors, the average standard of design in the entries submitted is not high, and no one design is considered as completely satisfying æsthetic and practical requirements. The higher fence, Type B, appears to have presented a more difficult problem than Type A. The selected designs are capable of improvement by minor alterations.

In addition to the premiated designs, a number have been commended and selected for exhibition as having features of interest. The authors are as follow :—

Type A.—P. H. Ball, A.M.I.Struct.E., E. Banks, A.I.A.A., C. G. Bath, A.R.I.B.A., A.M.T.P.I., P. J. Carter, L. A. Disney, L. J. Fox, H. M. Hedges, K. A. Lloyd, A.R.I.B.A., and G. A. G. Miller, A.R.I.B.A. (a second design), D. Lowen, A. J. Michie, J. E. Noller, G. Stevenson.

Type B.—L. A. Disney, K. A. Lloyd, A.R.I.B.A., and G. A. G. Miller, A.R.I.B.A. (a third design), and J. E. Noller.

An exhibition of designs will be held from July 23 to August 3 (Mondays to Fridays, 9.30 a.m. to 5.30 p.m., Saturday, 9.30 a.m. to 12.30 p.m.), at the Royal Society of Arts, Adelphi, W.C.2.

SCHOOL DESIGN AND CONSTRUCTION

REPORT OF R.I.B.A. COMMITTEE.

A COMMITTEE on school design and construction was appointed by the Council of the R.I.B.A. at their meeting on February 13, 1945, "to consider and report as quickly as possible on the subject of school design and construction," and the following members were appointed to serve :—

C. G. Stillman, F.R.I.B.A. (chairman), County Architect, West Sussex ; W. T. Benslyn, A.R.C.A., F.R.I.B.A. ; P. W. Birkett, A.R.I.B.A., County Architect, County of Lincoln—Parts of Lindsey ; D. E. E. Gibson, M.A., A.R.I.B.A., A.M.T.P.I., City Architect, Coventry ; J. Harrison, A.R.I.B.A., County Architect, Derbyshire ; Julian Leathart, F.R.I.B.A. ; Oswald P. Milne, F.R.I.B.A. ; S. E. Urwin, F.R.I.B.A., County Architect, Gloucestershire ; E. Berry Webber, A.R.I.B.A.

Owing to illness, Mr. Gibson was unfortunately unable to attend any of the four meetings which the committee has held. The committee wishes to record its thanks to Mr. Leathart for his work in drafting this report.

The committee has considered the subject under the following headings :—

(*a*) The General Problem.
(*b*) The Architect's Contribution.
(*c*) Delays in Administrative Procedure.
(*d*) Methods of Construction, available Materials and supply of Labour (with a note on war-time hutting).
(*e*) Improvement of Existing Buildings.

(a) The General Problem.

1. Losses due to enemy action, the virtual suspension of normal school building during the war, the reorganisation of education throughout the country to conform with the provisions of the Education Act, 1944, the provision of school accommodation on new housing estates and the deficiencies in the pre-war building programme, have created an unprecedented demand for post-war school building.

2. Speed in the building of new schools is a vital necessity and it is doubtful if pre-war methods of construction and finishings can be followed in the production of a sufficiently expeditious output of building to fulfil all needs.

3. Available immediate post-war resources of materials and labour are relatively slender and are likely to be concentrated at first on rehousing.

These facts lead to the consideration of the type of building, which will accomplish all that is required in the quickest possible time.

The following observations arise therefrom :—

(*a*) Until building trade conditions are fully restored to pre-war standards a limitation on the range of materials and availability of labour will inevitably place restrictions upon design. The enforced adoption of substitute materials and their effect upon construction and design may well result in buildings of unconventional appearance and to some extent of untested character as regards durability and resistance to hard wear. On the other hand, greater speed and facilities for future alterations can be expected.

(*b*) Rigid uniformity in constructional methods and the use of substitute materials irrespective of the diverse climatic conditions which prevail in the north and south of England, is undesirable.

(*c*) Equally undesirable is an absolute standardisation in planning and design which fails to observe site conditions, local building traditions and the customary practice of skilled building craftsmen.

(*d*) In districts where there may be a sufficiency of materials such as brick and stone and an adequate supply of labour, there should be no reason for the adoption of temporary expedients in construction. Where no such initial advantages occur, substitute materials at first used for wall-cladding may have to be replaced later by those of better and more durable quality as and when they become available from production sources. This point is amplified under "Methods of Construction and Availability of Materials and Labour," where a suggestion is made on the feasibility of combining both categories of materials in one building. (See *d*, paragraph 3).

(b) The Architect's Contribution.

It is probable that we are entering a decade of strictly utilitarian building. The success of utility building, from the architect's viewpoint, lies in the assemblage of the component elements of the plan into a well-organised composition, in the full and correct use of colour and texture and in a pleasant treatment of the site lay-out. Much can be done to enhance the appearance of a simple building by imaginative planting of trees, shrubs and flower beds and the arrangement of approach ways to the school.

Whatever may be the form of the chosen system of construction, it is of the utmost importance that it is expressed in a rational, yet seemly, architectural manner. The school is the physical background to the early and impressionable years of a child's life, and the environment of the building and its site-setting created by good design will exert a beneficial influence in character-forming at the most receptive age. The child's mind is receptive to the appeal of simplicity in line and form and reacts with enthusiasm to the influence of colour and texture.

As simple form will be the chief characteristic of post-war school design, it is reasonable to expect that the children will be attracted to their new environment. Upon the architect's degree of insight into the mind of the child will depend the success of his work. A school should not become so detached, architecturally speaking, from its primary purpose as to bear oppressively on the minds of the young.

It is therefore of importance that local authorities should be urged to avail themselves of the guidance of qualified architects in the planning and design of their school-building projects. Each individual site presents a new problem in planning and the exercise of architectural skill.

(c) Delays in Administrative Procedure.

Present routine procedure to obtain approval consists of a large number of separate operations which fall into three groups : (*a*) Acquisition of site ; (*b*) approval of sketch plans and, later, of working drawings ; (*c*) approval of tenders and contract documents.

(*a*) As slow as was pre-war procedure in site acquisition, it is likely to be slower still if the suggestions are adopted that the Ministries of Agriculture and Transport act as consultants before land can be purchased by a local authority. Whilst it is recognised that consultations with these two Ministries is intended to check sporadic building development, the misuse of valuable agricultural land and other kindred evils, there is no suggested machinery of approach to these authorities which is likely a produce expedition. It is suggested that the Ministry of Education should explore the possibility of reducing delays which occur in the acquisition of sites.

(*b*) At present there is a two-stage examination of the architect's scheme : at the sketch plan and working drawing stages. Too much delay arises in the official process of approval by the present custom of passing the architect's plans from one specialist examiner to another. It is suggested that one authoritative examiner, conversant with *all* the details of school-planning requirements, should examine and approve. If this is done it

will eliminate overlapping in the examination process and simplify discussing amendments with the architect.

(c) The present official practice of inviting, by open advertisement, all and sundry to tender for a school-building contract is inimical to sound building and a waste of labour and time in preparing a large number of copies of the relevant documents and drawings. It is suggested that the authority should prepare a list of contractors of repute who are known for their capability.

(d) Methods of Construction, Available Materials and Supply of Labour.

1. Methods of construction will depend upon the sort of materials likely to be in the most plentiful supply for the next few years. Housing work will absorb a considerable proportion of the output of the brickfields. The use of stone, natural or reconstructed, is likely to depend upon the number of skilled masons available for working and fixing.

Timber supplies imported from abroad will not be plentiful until more shipping is released and economic recovery is within sight.

Ferrous and non-ferrous metals should be in good supply within a comparatively short time and when the industry is reorganised on a peace-time basis.

2. It follows therefore that the use of the load-bearing brick or masonry wall must be curtailed and the adoption of the point-load structural framework considerably extended. A supporting framework of steel sections or of pre-cast reinforced concrete will decrease structural weight and increase the speed of site operations. Pre-assembled framed units made under workshop conditions will produce dimensional precision and facilitate the fixing of standard-size, wall-cladding materials.

3. As the largest section of a school building is composed of teaching rooms, cloak and changing rooms and lavatories, it may be expedient to adopt the steel or concrete frame for their construction in combination with load-carrying brick or masonry walls with plastered internal finishings for the construction of assembly halls, staff and administrative rooms and main entrance halls. By this means architectural significance will be imparted to the focal grouping of the composition and allow the architect a greater freedom of expression.

4. Wherever the steel or concrete frame is used, whether throughout the whole building or confined to the sections named in paragraph 3, it should be designed as the permanent framework of the building. Although it may be necessary to use utility cladding materials of a short-term life at first, these should be regarded as temporary expedients only and should be replaced by permanent materials of a better quality in appearance and durability as conditions permit.

5. Heavy external maintenance costs are inevitable with temporary facing materials, and this recurring item of expenditure will be saved when substitution is effected.

6. Some alternative cladding materials to brick, stone and glazed terra-cotta are glass, resin-bonded plywood, asbestos, non-ferrous metal sheets, and thin pre-cast concrete slabs, all of which need no protective surface treatment. Paper or wood pulp boards, hard wallboards, wood-wool and plasterboard are unsuitable for external use unless suitably treated. It is anticipated that asbestos, aluminium, copper, stove-enamelled sheet steel, glass, paper or wood pulp boards, hard wallboards, wood-wool and plasterboard will be in fair supply again in the near future. Scantling timber is likely to be scarce for some time to come.

7. The Government's "fair-for-all" demobilisation programme, unless it is drastically modified in favour of the basic reconstruction trades, will frustrate the return of all young building tradesmen now serving in the armed Forces whose demobilisation numbers are high by reason of insufficient length of service. Persistence in applying the principle of demobilisation by strict rotation, therefore, will prevent, for some years to come, the full mustering of building labour resources for reconstruction work.

The quality of building craftsmanship has deteriorated during the war years (due to a large extent to younger men being drafted into the Forces), and this, together with other factors affecting labour conditions, will be reflected for some time to come in a diminished man-hour output.

The less the amount of skilled labour required in site operational work the greater will be the aggregate output of building. This is the substance of the advocacy for a type of building which may be done by a semi-skilled and unskilled labour.

There is reason to expect that Government-controlled direction of building labour will continue for some time, with the attendant expedients of designated labour, uniformity agreements and bonus payments.

The rapid training of new entrants to the building industry is essential. Their training should include instruction in the technique of dealing with the erection and assembly of all new methods of construction and the use of up-to-date machine tools.

Notes on War-time Hutting.

1. Very little permanent-type school building has been erected during the war; additional accommodation has been provided in the form of standard hutting either of the concrete portal-frame or plaster-board types. Roof construction of home-grown timber with reduced scantlings eked out by the application of plywood gussets with synthetic tarred felt covering has proved to be a failure. Heating has been provided by slow-combustion stoves and ventilation left to its own devices, fresh air being introduced through cracks between window and door frames and the adjoining jambs.

2. Standard war-time hutting is definitely sub-standard for post-war school building. The huts are too low for corridors to be provided and natural lighting, heating and thermal insulation are inadequate, while high-level cross ventilation is impossible to achieve. All these shortcomings are fundamental defects in school construction.

3. The huts have been found to be comparatively expensive to erect and maintain, and delays, owing to widely-spread sources of supply of components and breakages in transit from depots to sites, have been all too common. Timber doors and windows supplied with the huts have been consistently bad in quality.

4. The completed hutting is shoddy and ugly in appearance and with the functional and structural disadvantages above mentioned, it is clear that no useful contribution to the provision of school building can be expected from this source. Its use for school accommodation should be discontinued forthwith.

(e) Improvement of Existing Buildings.

1. A large proportion of the school-building programme will consist of enlarging and improving existing premises. In this work each case requires individual attention, and although it may be possible in some instances to use light-weight structural units for extensions, the greater part of the alterations must be carried out in the traditional manner. Work of this character, particularly having regard to the difficulties of closing schools for extended periods, must inevitably be slow and costly and will absorb a great amount of traditional building labour and material.

The extent of the improvements required to bring the buildings up to present-day standards and to provide additional accommodation, will vary considerably according to the age, condition and type of school. Many of the buildings are very old, completely obsolete and built in a manner to make them almost incapable of adaptation.

2. The classrooms are too small or badly shaped; they cannot be entered save through other rooms; natural lighting, heating and ventilation is poor, sound insulation bad and the service accommodation, *i.e.*, staff rooms, kitchen, dining-room, stores and drying facilities, etc., unsatisfactory or non-existent.

Cloakrooms, lavatory and w.c. accommodation are often out of date and inadequate, and in many cases there is no suitable assembly hall nor facilities for physical education, *i.e.*, gymnasium and changing rooms, etc.

Sites are too small and the playground space insufficient.

In a great many instances it will be quite impracticable to make the necessary improvements, and in these cases the schools must be closed and replaced by new buildings.

3. Despite the fact that in probably four cases out of five it would be more satisfactory to rebuild completely, every effort must be made to reclaim as many of the older schools as possible if only to relieve the pressure on rebuilding generally. In doing this, however, careful consideration should be given to the following points:—

(*a*) That time, labour and materials required for remodelling should be compared with those required for the erection of a completely new school.

(*b*) That the accommodation will be needed for a sufficiently lengthy period to warrant the cost of the alterations.

(*c*) That the accommodation can be made to conform to the new standards.

(*d*) That the premises, when altered, will be capable of still further adaptations to meet future changes.

(*e*) That the return of evacuated children to their homes may make it impossible, in some instances, to dislocate further their schooling by the interruption caused by alteration work.

Conclusions.

1. Future changes in educational theory and practice are unpredictable, but it will be unwise to ignore the probability of their occurrence. The present-day teaching system bears little or no resemblance to the accepted educational policy of 40 years ago, and the development of oral and visual radio transmission, to name but one example, may produce as great a relative change during the next 40 years.

2. The new school-building programme to the standards set forth in the latest School Building Regulations will prove to be a very large undertaking, and it is obvious that it will have to be spread over a number of years.

The foregoing observations lead to the conclusion that it would be against the nation's interest if a school-building policy were adopted which stresses rigid uniformity in constructional methods and absolute standardisation in planning and design. The danger of such a policy is that the school buildings will act as an obstruction to later experiments in progressive educational development. The old school boards built standard-pattern schools which were considered adequate for the system of education best suited to the needs of that time. These schools are now hopelessly antiquated and cannot be altered and adapted economically to accord with present-day requirements. So it may be with the schools now to be built, unless the utmost flexibility in planning and construction is adopted.

3. Local education authorities should be encouraged to experiment, under expert architectural guidance, with methods of construction best suitable to local climatic conditions and the use of materials most readily available to them. A school built on the Yorkshire moors needs to be more sturdily founded than one built in the sheltered folds of the Devonshire hills. Local knowledge gained from long experience is, in the long run, the most reliable guide to sound building.

THE ARCHITECTURAL ASSOCIATION

MR. PERCY THOMAS'S ADDRESS AT ANNUAL PRIZE-GIVING.

ADVICE to those entering "that most interesting and fascinating profession," architecture, was given by MR. PERCY E. THOMAS, President of the Royal Institute of British Architects, when he distributed the prizes and opened an exhibition of students' work at the school of the Architectural Association in Bedford-square, W.C., on Friday last.

The prospects before architects for many years to come, he said, were wonderful and exciting. Young architects while, like the rest of us, regretting the loss of so many noble buildings in the war, should not devote too much time inquiring how and why it happened. They should concentrate on the task of rebuilding our cities and, in other words, not try to mix politics with architecture. For some years the greater proportion of building labour and materials would have to be devoted to houses, factories, and the repair of bomb damage.

But even in that limited sphere there was any amount of scope for the young and really enthusiastic architect. Some of the best factories in this country had been built during the early days of the war, and his war-time experience had convinced him that there was a great future for architects on the industrial side of our national life. That was a branch that had been neglected.

Mr. Graham Dawbarn (President, A.A.) was in the chair.

SCHOLARSHIPS AND PRIZE AWARDS

LEVERHULME SCHOLARSHIP.—The Leverhulme Scholarship for this session (value £1,000): Wm. J. G. Godwin, Wrekin College, Wellington.

MINTER OPEN ENTRANCE SCHOLARSHIP (value £75 12s.).—Result later.

SIR WALTER LAWRENCE OPEN ENTRANCE SCHOLARSHIP (value £75 12s.).—Result later.

ROYAL WEST OF ENGLAND ACADEMY SCHOOL OF ARCHITECTURE (affiliated to the A.A.). Prize in design (value £5 5s.).—L. J. Day.

ALEC STANHOPE FORBES PRIZE for the best colour work in the school (awarded annually, value £5). Miss M. G. F. Pepys Cockerell.

FIRST YEAR PRIZES.—Howard Colls Travelling Studentship (value £15 15s.): Ronald A. Green (Minter Scholar); second prize (value £1 1s.), Charles H. C. Cullum; hon. mentions, Patrick W. Crooke, M. A. Crosley (Leverhulme Scholar), Peter G. Smith, J. F. Charlewood Turner, and Anthony T. Williams.

SECOND YEAR PRIZES.—A.A. Travelling Studentship (value £26 5s.): Miss Lilian M. Sims; second prize (value £1 1s.), T. H. M. Nesbitt; hon. mention, David M. Gregory Jones.

THIRD YEAR PRIZES.—Holloway Scholarship, tenable for senior course (value £150): Miss June H. Vinycomb; Third Year Travelling Studentship—Certificate of Honour (nom. value £1 1s.), Miss Mary M. Harper; third prize (value £1 1s.), William R. Headley.

FOURTH YEAR PRIZE.—Certificate of Honour for Year Prize (nom. value £10 10s.).—Bruce Martin (Holloway Scholar).

FIFTH YEAR PRIZES.—Henry Florence Travelling Studentship (value £50): Neville Conder (Holloway Scholar); Certificate of Honour for Fifth Year Travelling Studentship: not awarded.

During the session the following awards were announced:—

THE MAY AND BAKER PRIZE (for constructional analysis): Miss Mary M. Harper.

FIRST MENTIONS, awarded during the session (value £1 1s.): J. F. C. Turner (1st year), Bruce Martin (4th year), and N. Conder (5th year).

ARCHITECTURAL ASSOCIATION DIPLOMAS: M. F. R. Horron Davies, J. H. Moya, Mrs. M. R. Taylor, and W. Taylor (Leverhulme Scholar) (Honours in General Work).

An exhibition of students' work is now on view at the A.A. The exhibition covers work from the first to the fifth year and ranges from work of an elementary character to more complicated projects based on subjects which are essentially needed to-day, worked out in every detail. A new branch of the school course has been developed to bridge the gap between the theory and the practice of building construction. A series of demonstrations and building operations have been planned to provide a working knowledge and experience of the materials and methods normally encountered in present-day building practice. During the first three years of this course the works will be carried out in a yard attached to the school. The works will be under the general direction of the Construction Master, and will be executed by the students under the supervision of skilled building operatives. Materials and skilled staff have been placed at the disposal of the A.A. through the generosity and co-operation of Messrs. Mullen and Lumsden, building contractors. The training provided during the latter two years of the School course will be given very largely in the works and on the sites.

COUNTY OF LONDON PLAN

FURTHER REPORT APPROVED.

THE London County Council, on Tuesday, approved the further report of its Town Planning Committee on the County of London Plan, prepared by Mr. J. H. Forshaw, M.C., F.R.I.B.A. (Architect to the Council) and Sir Patrick Abercrombie (Consultant). The Committee's recommendations for (*a*) general planning principles, and (*b*) operations in the immediate future were published in our last issue. The Plan itself was illustrated and reviewed in *The Builder* of July 16, 1943.

Introducing the report at a Press conference on July 12, LORD LATHAM said that present powers possessed by the L.C.C. were insufficient to put the plan fully into operation. Control of land use could not be achieved until the basis of compensation and betterment had been settled. Greatly increased Exchequer assistance would be required, especially in regard to the scheme for roads. Present grant for roads in London averaged 70 per cent. of the cost, though outside London 100 per cent. could be obtained for trunk road construction. It was worth noting that, while London subscribed 15 per cent. of the Road Fund, it obtained only 1 per cent. benefit.

The cost of the schemes now outlined might be anything up to £200 millions in the next ten years, but the schemes immediately in view within the next three to four years were estimated at £26 millions, apportioned as follows: Roads, £7 millions; open spaces, £4 millions (which would give London an additional 300 acres); and reconstruction areas £15 millions, principally the acquisition of land.

MR. LEWIS SILKIN (chairman, Town Planning Committee) said that the major principles behind the plan were: (1) the restoration of communities, and (2) the preservation of the character of London. No plan could be rigid. The Council had not assumed that because they had no powers that nothing could be done.

[The proposals are reviewed in our Leading Article (page 41).—ED.]

Bartlett School of Architecture.

The Bartlett School of Architecture, the University of London, which has been working at Cambridge during the war, is now returning to its proper home (University College, Gower-street, W.C.1). Work will be resumed in London as from the opening of the Michaelmas Term on Monday, October 1. Particulars of the Courses of Study may be obtained on application to the Secretary of the College.

ARCHITECTS' REGISTRATION COUNCIL

53RD COUNCIL MEETING.

MR. SYDNEY TATCHELL, F.R.I.B.A., took the chair at the 53rd quarterly meeting of the Architects' Registration Council, held at 66, Portland-place, W., on June 22.

THE REGISTRAR reported that the Draft Revised Code of Professional Conduct had duly been circulated and comments would be considered at a special meeting of the Council to be held in November. It would come up for final confirmation at the December meeting. It was also reported that the Privy Council had approved the following amendment of the Disciplinary Regulations, made in pursuance of the 1931 Act:—

After Regulation 12 *add*:—

"12A. When the Council has passed a resolution under Regulation 12 directing the Registrar to remove the name of a registered person from the Register, the Council shall, unless it by resolution otherwise determines, cause a notice of its resolution and of the findings, or a report of the findings, of the Discipline Committee to be published."

Advertisement for Official Architects.

A motion was discussed, in the names of Major G. B. J. Athoe and Major L. A. F. Ireland, "that this Council . . . views with apprehension a marked tendency on the part of public authorities to include in public notices of vacancies on their staffs and appointments of official authorities and architectural assistants a stipulation that only persons who are either Fellows or Associates (not Licentiates) of one only of the constituent bodies of the Registration Council shall be eligible to make application for the post advertised." The motion went on to invite a resolution that "adequate and immediate steps be taken by the Council to the intent of correcting a situation which is unfair, unequitable and derogatory to so many of those persons who are represented by this Council. . . ."

A lively debate followed, and eventually the motion was withdrawn in favour of a motion proposed and seconded by Mr. A. N. C. Shelley and Mr. H. J. King that a sub-committee of five members of the Council (a number subsequently increased to eight) be appointed to consider the original motion and to report to the next meeting whether steps could properly be taken by the Council to secure the purpose of the motion. The sub-committee was appointed as follows: H. E. G. Stripp ("unattached"), Darcy Braddell (R.I.B.A.), H. H. Murray (Faculty), R. L. Townsend (A.B.T.), Norval R. Paxton (Provincial Associations), J. G. Grey (A.A.), R. G. Baxter (I.C.E., I.S.E., C.S.I., I.M. & C.E.), G. B. J. Athoe (I.A.A.S.), and A. N. C. Shelley.

The Admission Committee recommended the admission of 43 applicants' names and the rejection of 49. Of the 5,274 applications under the 1938 Act and Regulation 26, all but 401 have been disposed of. The names of the following persons, whose appeals have been allowed by the Tribunal, have been entered on the Register: E. S. Brown, V. Comfort, J. L. T. Donaldson, W. L. Hall, J. G. Hunt, C. Palfreyman, D. F. Price, G. Williams, and H. J. Wilshaw. Nineteen appeals have been dismissed.

The Finance and General Purposes Committee reported six reinstatements. The names include Prof. Sir L. P. Abercrombie.

The Board of Architectural Education recommended 15 boys and three girls to scholarships, at a total cost of £1,285. Fourteen holders of scholarships have had grants renewed.

CORRESPONDENCE

Appointments and Service Men.

To the Editor of *The Builder*.

Sir,—It is with considerable apprehension that I note the various notices under the "Appointments Open" section in recent issues of *The Builder*. A great many of these notices are qualified by such phrases as "exempt military service," "view to permanency," etc.

While fully appreciating the acute position of manpower available for housing and other vital building works at home and the shortage of technicians in the industry, I suggest that conditions of this nature are in effect placing members of the Forces at a considerable disadvantage in respect of post-war employment. Those due for early demobilisation will, of course, have a fair opportunity of competing for appointments, but I consider they constitute a very small minority.

It is only reasonable to assume that a considerable number of the better-paid appointments will be filled before professional men and women still serving in the Forces have an opportunity of making application for such appointments.

I would suggest that, until demobilisation has been completed, all appointments open should be advertised as temporary, both by local authorities and professional firms inserting notices of the nature referred to above, otherwise members of the Forces will be penalised by lack of opportunity. Personally, I do not consider that I am entitled to any preferential treatment due to service in the Forces so far as post-war employment is concerned, but I feel very strongly that I am entitled to the same opportunities as my civilian colleagues.

My opinion on this issue is by no means isolated, and I trust that some positive action may yet be taken by those responsible to ensure that we do not return to civilian life under any additional handicaps to those which already exist through loss of practice.

R. Leitch, Sgt., R.E.,
A.F.S.(Eng.)Quants.

G.H.Q., M.E.F.

Appointments and Salaries.

To the Editor of *The Builder*.

Sir,—"Forward's" letter in your last issue contains much good sense, but his suggestions, however commendable, are hardly likely to be followed, as the majority of employers, professional and otherwise, still continue to seek their labour in the cheapest market.

Epsom. Surveyor-Employee.

"Price Rings."

To the Editor of *The Builder*.

Sir,—From time to time we have seen statements in Parliament and elsewhere to the effect that price rings exist in all Building and Allied Trade Associations, these being based on a remark made by Sir George Burt. We are members of the Association of Flooring Contractors and the Association of Jointless (Oxychloride) Flooring Manufacturers and know of no such arrangement at present existing, or ever having existed, since the inception of either.

Such statements, which are causing great harm to an honourable trade, should only be made if they can be proved without any possibility of doubt, and we challenge Sir George or anybody else to come forward and produce evidence that the flooring trades have an arrangement such as indicated above.

P. D. Philip,
Philip Flooring Company.

Finchley, N.3.

CONTRACT PRE-PREPARATION AND SETTLEMENT OF ACCOUNTS

MR. A. HARRIS'S UNIVERSITY LECTURE FROM THE QUANTITY SURVEYOR'S STANDPOINT.

The fifth and last in the series of Extension Lectures arranged by the University of London, was given on June 28, at the School of Hygiene, Keppel-street, W.C.1, by Mr. Alfred Harris, D.S.O., F.S.I. Mr. Clow Ford, University Extension Registrar, took the chair.

Mr. Harris, who took as his subject "Contract Pre-preparation and Settlement of Accounts from the Quantity Surveyor's Standpoint," said:—

I am dealing with it from the angle of my own profession—for there is more than one side to these problems. The subject is of overriding importance to the architect, contractor, building owner and quantity surveyor alike, and it covers the whole field of the financial administration of building contracts. The subject is in two divisions, and I will deal with "Pre-preparation" first and "Settlement of Accounts" later.

PRE-PREPARATION OF CONTRACTS

"Pre-preparation" involves, as a preliminary, the consideration of the type of contract which is most suitable for the proposed work and then the preparation of all the documents necessary to form the contract which may include all or any of the following: Drawings, Articles of Agreement, Conditions of Contract, Bills of Quantities, Schedules of Prices and Specification.

It does not follow that all of these documents are necessary to form a contract, or, indeed, that it is possible to prepare them before a contract is entered into; the general circumstances of each case will determine this, but the amount of time available and the character of information at our disposal will be powerful, if not deciding, factors in determining which course to adopt. On this decision will be based the recommendation to the building owner as to the type of contract to be used.

There are two main types of contract. In the first group are those based upon a reimbursement to the contractor of the prime cost to him of the work, plus either an agreed fee or an agreed percentage, or an agreed addition to the prime cost calculated from a comparison between the prime cost and a valuation of the work done made by the quantity surveyor. The latter method has become known as the "target cost contract," of which there are many variants, each endeavouring in different ways to keep down the cost of the work by conferring benefits upon the contractor should his endeavours to this end be successful. In the second group are all "fixed price" contracts, including those based upon schedules of prices, approximate bills of quantities and accurate bills of quantities.

COST REIMBURSEMENT CONTRACTS.

Taking the first group of these alternatives (the cost reimbursement group), let us consider under what conditions it is fair and reasonable to place a contract on such lines. Such cases would be where essential information is lacking and likely to be lacking until the work is required to be done, resulting in the contractor being provided with information almost from day to day, or where market conditions are so unstable that it is not possible for the contractor to place firm orders for any reasonable time ahead, or again, where labour conditions are so unsettled or unknown as to make it virtually impossible to estimate output with any reasonable accuracy.

It is essential to this method that all the parties concerned have the fullest confidence in each other and that the contractor should be remunerated by a fixed fee rather than by a percentage on cost. Such a fixed fee can, of course, be on a sliding scale varying for different values of work. A very real need in respect of such contracts is an agreed standard form of general conditions. There are the war time forms of prime cost contracts issued by the Ministry of Home Security Air Raid Precautions Department for Emergency Works and the Ministry of Health Form of Prime Cost Contract to be used by local authorities in England and Wales for the repair of war damage to dwellings. Both are valuable, but neither is fairly or fully applicable to the circumstances of post-war cost reimbursement contracts and a new agreed form for this purpose is very desirable.

Whatever the form of contract finally decided on, it should contain a clear definition of "prime cost," and in this respect the Ministry of Health Form and the War Damage Commission's pamphlet known as R.O.D.I. both contain such definitions, but again they are not the same in all particulars. It should also be clearly stated how discounts are to be dealt with, whether trade or cash discounts and including long-term trading rebates based on turnover.

The target cost contract which involves independent valuation of the work by measurement as well as checking prime cost has hardly justified itself during the war, and has proved to be costly in administration, as the valuation has to be done twice. It none the less does provide some incentive with cost reimbursement contracts, other than that of goodwill, for a contractor to avoid bringing the job out at a high figure, and there may well be circumstances in which it may be judged advisable to incur the higher administrative costs in order to effect a still higher saving on the building costs. The cost reimbursement type of contract has been frequently adopted because it permits an early start being made with the work, but in my view this is the weakest of all grounds for its adoption, because it has been shown over and over again that an early start does not necessarily mean early completion ready

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for user, and that is surely the only test that can be applied when considering time as a factor in a discussion on this point.

If a cost reimbursement contract is let to gain time, I see no reason why the first part of the contract—say, up to ground-floor level—should not be let on a cost reimbursement basis, affording further time for the consideration of the building owners' requirements and the completion of the drawings and bills of quantities, permitting the balance of the work to be let on a fixed-price basis. I cannot call to mind any occasion on which that has been done, but I can see no objection to it if the information necessary for a fixed-price contract should become available in time.

Cost Reimbursement Variants.

There is no doubt in my mind that there is a field of contracting for which some variant of a cost reimbursement contract is more suited than any other, and although it is not a popular type and, indeed, has often met with very severe criticism, I none the less believe there will be many occasions on which it will prove to be the only practicable course to follow. The method has the drawback that there can be no precise knowledge of the ultimate cost, except such as may be obtained from an approximate estimate prepared by the quantity surveyor, and it should be remembered that any such estimate will have been compiled under the limiting factors already noted.

I would recommend that in all cost reimbursement contracts the quantity surveyor should, as soon as practicable, produce a close approximate estimate of the cost of the work—it may be, and probably will be, some time after the commencement of the work before this can be done. This estimate should be arranged in stages of the work, *i.e.*, the carcass floor by floor, the finishings by trades, site work and specialists' sections under their respective headings, and the contractor's prime cost book and other records of cost—including, of course, similar records by all sub-contractors—should be so ordered as to be comparable with the stages of such approximate estimate. This will enable some substantial control over cost to be achieved—not, of course, so complete or so early as is possible with an accurate bill of quantities—but it is far better to strive to achieve such control as is possible rather than allow the work to go on to completion without any such effort, and then possibly be faced with a far higher cost than anticipated, for then the professional man may lose a hard-won reputation, the contractor may be regarded with suspicion, and the industry get a bad name.

Facing such risks, it is not surprising that the cost reimbursement type of contract is generally reserved for special cases, and that is where I would leave it and pass on to the second main type or "fixed-price contracts."

FIXED-PRICE CONTRACTS.

As previously noted, there are several different methods of arriving at fixed-price contracts, and they can be conveniently grouped into three classes:—

(*a*) Those supported by a letter or "offer" based upon a survey or based upon drawings and specification;

(*b*) Those based on schedules of prices; and

(*c*) Those based on bills of quantities.

The first of these groups are the simplest form of building contracts suitable for small works of repair or new construction. The second group or schedule contracts can be again divided into two separate parts:—

(1) Those based on schedules of descriptions (without quantities) of items of work required to be done, priced and agreed by the contractor and the quantity surveyor.

(2) Those based on schedules of descriptions with fixed prices such as the Ministry of Works Standard Schedule of Prices.

The first of these latter two alternatives is suitable to many conditions previously referred to as suitable for cost reimbursement contracts; and where sufficient time and information is available to admit of the preparation of such a schedule (which is much less in both respects than is the case with a bill of quantities) it does gain control over price at an early stage of the work. This is not the same thing, of course, as control over ultimate cost.

In the cases we have considered up to this point, competition is barely practicable, and if these types of contract are used, it is better to select a contractor, place one's confidence in him, and negotiate freely for his goodwill. From this point on, however, it is possible to obtain competition, although, as we shall see, the character of the conditions under which competition is secured, and therefore the value of it, differ in each case. In the second schedule case, for instance, where tenders are asked for on schedule of descriptions with fixed prices, the contractors are usually asked to quote a percentage on or off the prices in the schedule. In so doing the contractor has to assess the relative quantities of work he will be required to do in the various trades, and as such particulars are rarely, if ever, available in an accurate form, he has to speculate upon them, thus incurring an element of a gamble, which it should be our aim to eliminate.

To illustrate this difficulty, let us assume that a contractor asked to tender on such a schedule possesses a well-found joiners' shop equipped with the most up-to-date machinery and power, backed by an expert purchasing department and capable of turning out high-class joinery speedily and cheaply. It is obvious that he will be better able to give a keen price for such work than a competitor who is not so equipped, but to translate such an advantage into terms of a percentage reduction in the price of excavation, rainwater goods, glazing and painting, etc., is obviously impossible of precise performance.

To get round this difficulty contractors are sometimes asked to quote percentages up or down by trades, but this only transfers the difficulty to other shoulders, as someone, usually the architect, engineer or quantity surveyor, has to advise the building owner which tender is the most favourable and to discharge such a duty fairly, when faced by differing percentages on or off a schedule by trades, is no enviable task.

The Ad Hoc Schedule.

The best type of schedule is one prepared *ad hoc* and therefore covering every item—or at least every item of importance likely to be found in the work to be executed. In all cases when using schedule contracts it is recommended that contractors be given the necessary information to enable them to fix firm prices for such items as general conditions, preliminary items, site works, site conditions, special facilities or difficulties which can be foreseen. Also I would strongly recommend that in all schedule contracts, as with cost reimbursement contracts, the quantity surveyor should prepare as soon as possible a close approximate estimate of the cost, to serve as a guide to the building owner of his financial commitments and to the contractor as a target for the ultimate cost of the work.

Contracts Based on Bills.

Let us now consider contracts based on bills of quantities. These are of two kinds—those based on approximate bills and those based on accurate bills. Where the building owner has fairly advanced particulars but cannot fully determine his requirements (and it is necessary to emphasise that word "fully") before authorising the work to proceed, yet desires to retain the competitive basis and is satisfied with a less accurate indication of his commitment than would be provided where full particulars are forthcoming, the use of an approximate bill of quantities is recommended rather than schedule contracts. This method has the great advantage that it introduces predetermined measurement of the quantities of material and labour as a common basis for contractors tendering, thus obtaining at the outset a better control over cost than is possible with any schedule of prices.

There is a danger here that the phrase "approximate bill of quantities" be interpreted too freely. It is not intended there shall be such freedom as to permit anyone—more especially those who are untrained or unqualified in this regard to enter in and distribute work of a quality which is sub-standard. Few documents require more judgment and experience to prepare properly than an approximate bill of quantities.

It is therefore necessary to emphasise that such bills should be subject to minimum standards, and therefore there must be sufficient particulars available to enable these standards to be attained. These minimum standards are:—

(1) That items are measured in accordance with the principles of the Standard Method of Measurement and in such a manner as to enable the contractors to price every item involved.

(2) That the quantities of each item are sufficiently related to one another to afford the contractor a reasonable indication of the relative proportions of work required (thus doing away with that gambling element to which exception was taken when discussing schedules of prices).

(3) That there is a proper description of site conditions, special features and contractors' risks.

(4) That the items when priced, extended and cast to a total and submitted as a tender, give the building owner a reasonable idea of the extent of his commitment.

It is important to recognise that these minimum standards should be observed as proper professional practice where this procedure is adopted.

This method saves an appreciable amount of time at the commencement of the work, as compared with the preparation of an accurate bill, as the quantity surveyor can prepare such a document from ⅛-in. scale plans and verbal instructions as to details which can be prepared later. Full and constant collaboration between the quantity surveyor and the architect is obviously of the highest importance if this method is to be a success. It would be valuable if the 1939 Standard Form of Contract could be provided with alternative clauses to suit the use of schedule and approximate bills of quantities contracts, as the existing form has to be considerably amended for such purposes.

The Accurate Bill of Quantities.

Our final consideration of the fixed price group of contracts is the accurate bill of quantities. This is suitable for conditions where the building owner can fully determine his requirements and requires a firm competitive price to enable him to gauge his financial commitments. It requires a full set of carefully worked out ¼-in. scale drawings supplemented by the whole of the ½-in details together with a complete and accurate bill of quantities. This bill of quantities should set out in detail every obligation and service which will be required of the contractor to which a cost, however small, may be assigned, and should state the general conditions and method under which the work will be executed.

The value of this method compared with alternatives can be understood when it is realised that in no other case are all the following important advantages combined in one document:—

(1) The contractor is advised as to his responsibilities and risks;

(2) The total quantity of labour and material required for the work is analysed in agreed units of measurement and description, and so enables the contractor to determine the prices he will apply to the units of work and materials necessary to arrive at his tender;

(3) A common basis for competition between contractors is attained;

(4) The building owner is given the closest possible indication of his commitment;

(5) A target is set for all concerned and an early control over price is gained.

(6) The work involved in arriving at interim payments on account is reduced to a minimum;

(7) Variations are reduced to a minimum; thereby assisting in the organisation of the work and the economic use of man hours, both vital objectives for economic post-war building; and

(8) A fair basis is provided for the valuation of any extras or omissions ordered within the terms of the contract.

This method has gained the confidence of architects, contractors and clients alike after operating for a century or more, and any suggestion that it should be discarded should be examined with the utmost caution. It is my submission that it is to be preferred to any other method.

The time occupied by the preparation of such a bill is frequently looked upon as a drawback, but I would suggest that such a view shows an inadequate appreciation of the value of such preliminary work indispensable to economy of both money and hours. It has been asserted that if bills of quantities be dispensed with, there will be a saving of the quantity surveyor's fees and an earlier start can be made with the work. Superficially, this is an attractive proposition, and has frequently led to other forms of contract being decided on. Experience has shown, however, that this reasoning is based on illusion. An immediate start has often been made only to find that important and indeed vital points have not been considered, involving general delay and forbidding good organisation of the work, finally resulting in no improvement or time over more established and beneficial procedure and frequently resulting in higher cost.

It is necessary to deal further with the subject of time for the preparation of accurate bills of quantities. In the post-war period it will be just as necessary to economise on professional and administrative man hours as on those of craftsmen and labourers. The time to be counted for quantities can be telescoped into that required for the preparation of the architect's drawings, as if the quantity surveyor be supplied with a set of the plans to ¼-in. scale with the sections and elevations, he can do a great deal of his work from them and complete when the details are available.

A further possibility in this connection is one to which I have referred before, viz: splitting the job into two contracts such as: (a) foundations and (b) superstructure. Thus, whilst the quantities for the foundations are being prepared, tendered for, and the work executed, there is available a considerable time for the completion of the contract drawings in respect of the superstructure. This method has been tried here with considerable success. It is also largely used in the U.S.A. In New York there was a firm which specialised in foundation work only, but this was probably owing to the special engineering difficulties encountered there, as New York is founded largely on rock. I would suggest that some of the truly astonishing speedy works of building for which that city is renowned owe their success to the adoption of this method of procedure.

A well-known contractor recently stated in public that when he was building for himself he invariably employed an architect and a quantity surveyor for his own benefit, and his firm did not embark upon the work until every detail was in their hands. As a result, he declared, they could build their work 25 per cent. cheaper and 50 per cent. quicker than when they were without this information. These are staggering figures, but even if they be exaggerated it is clear that the saving of time and money arising out of the adoption of this type of contracting—*i.e.*, with the accurate bill of quantities—are of vast importance to the industry and the nation in respect of its post-war programme.

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Specialists' Work.

Whilst on this subject I would refer to the preparation of quantities for specialists' work, such as heating, lighting, etc. It is observed that the committees responsible for Post War Studies Nos. 9 and 11, dealing with mechanical and electrical installations, put in a strong plea for early and continuous collaboration with them by the architects. Unfortunately, they omitted the quantity surveyor in this recommendation, and I would say that as an aid to efficient and economical financial administration, it is highly desirable that the skill and experience of the quantity surveyor be utilised to the full, particularly at the inception of the scheme, in the interests of the client, the architect, the engineer and the industry.

It has now become more or less standard practice on the part of some Government Departments to prepare schedules for such specialists' work, and to proceed to competitive tender and adjust the accounts by way of valuing extras and omissions in the usual way, or by measurement. This method would necessitate the preparation of proper drawings and a specification, but these are also required when obtaining a price without the aid of quantities. This method is more common with the structural engineering work than with the mechanical and equipment installations, but it is slowly becoming more and more generally understood and adopted in the latter field also. It should become general with the co-operation of the engineers concerned, to the great advantage of the client and the industry.

It should not be assumed that when a prime cost sum appears in a bill that the competitive element is absent, for this is not so. Frequently the work covered by the prime cost sum (except where the work concerned is of an artistic character) has been carefully measured and the bill of quantities circulated to selected sub-contractors and the lowest price received entered in the bill as a prime cost sum. To such procedure there can be little, if any, objection, but if such a practice leads to a very large proportion of the total contract being dealt with in this way, it is only fair that the general contractor should have the opportunity of tendering for the work or objecting in any reasonable way to the sub-contractor it is proposed to employ. The competitive element therefore should not be absent when prime cost sums are dealt with except in the one class I have mentioned.

May I now turn to the second part of my subject, i.e., the settlement of accounts. Some years ago it was the habit of the quantity surveyor almost to forget a job when the contract had been let until the time came to square up the contract as a whole. This is not the case to-day, even on small contracts, as the quantity surveyor is called upon to advise as to payments on account and on large contracts it has become the practice during the war to maintain resident surveyors whose duty is to keep track of variations as they occur, measure them and value them, and generally under the the supervision of his principals to ensure a proper record and valuation of the work. He must be backed by the usual head office staff, and if this organisation is well supervised it works well.

The success of this method seems to depend, however, very largely on the personality of the resident surveyor, who must possess many qualities and characteristics not necessarily possessed by a measuring surveyor, the head office backing and, above all, the expert supervision and direction by the principals.

Reverting to the first group of contracts with which we dealt, i.e., the cost reimbursement group, the quantity surveyor's duties in connection with such contracts entail the checking and certification of the accounts kept by the contractor and sub-contractor (it is not the quantity surveyor's duty to keep the ac-

counts himself) ensuring that they are properly prepared and in accordance with the contract conditions and, in particular, that the prices paid for materials and plant (whether purchase or hire) are not only correct but reasonable, and that the rates of wages paid are in accordance with the agreements between the Employers' Federation and the Trade Unions concerned.

It may well be that cost reimbursement contracts embrace within themselves fixed price sub-contracts, because as time goes on more information is available, thus permitting the preparation of a bill of quantities for some sections of the work and the receipt of competitive tenders for it, and the subsequent inclusion of the accounts for such work, after verification, in the general contractor's prime cost account. The settlement of accounts in this type of contract is therefore straightforward, but I regret to say the client is often left with the impression that he pays more for the work than he should have done.

The settlement of accounts for contracts based upon schedules of prices involves complete measurement of the work as it is executed, and this is best done by the quantity surveyor and contractor's surveyor working together and settling their difficulties and disagreements, if any, as they go. The pricing is, of course, that of the rates contained in the schedule, with any percentage adjustment in accordance with the contract.

The settlement of accounts for contracts based upon either approximate or accurate bills of quantities is based upon the same principles. With approximate bills there will be much more measuring, sometimes even a remeasurement, inasmuch as when the bills were prepared much information was lacking. With accurate bills, unless there have been a large number of variations, there will be the minimum amount of measuring, valuation of deviations and argument, resulting in a speedy settlement of accounts and one which is fair to both parties and the contract. The importance of having this work done by an independent chartered quantity surveyor is, I think, manifest, and the small number of disputes resulting in arbitration or litigation when it is so done is a source of gratification to the industry as a whole.

Adjustment of Extras and Omissions.

The adjustment of extras and omissions on these contracts, whether those of the general contractor or those of his sub-contractors, involves little practical difficulty to experienced and well qualified people, although it may involve much argument. These arguments generally centre around such points as to whether or not the description of the work in the bill of quantities was adequate to convey to the mind of the estimator when preparing his tender a proper and full understanding of the work required to be done and further, of the conditions under which it had to be executed.

Clause 9 of the Standard R.I.B.A. Schedule of Conditions of Building Contract says: "The prices in the Bills of Quantities shall determine the valuation of extra work of similar character executed under similar conditions as work priced therein."

This clause then goes on to deal with the methods to be adopted for valuing work not of similar character or not executed under similar conditions as work priced therein. The importance, therefore, of the quantity surveyor accurately describing the work and the conditions under which it is to be executed is clear, and will require just as much care when compiling the bill of quantities as the accuracy of the measurements of the quantities of material and labour. There is no doubt that if work has to be executed under conditions not envisaged at the time of pricing there must be a variation in cost and an adjustment of price.

The contractor is under a responsibility, moral if not actual, to avoid extra costs, and even if that assertion be disputed few will disagree with me when I say it is to the advantage of all concerned to avoid that discreditable situation arising when the end of the job is in sight about which I spoke when dealing with cost reimbursement contracts. To prevent this state of affairs arising I would suggest the closest possible liaison between the contractor's surveyor and the quantity surveyor; the up-to-date production of claims for variations at every site meeting—an institution I take for granted on every contract of magnitude; together with full supporting authority and an early agreed valuation of same, so that the architect and his client may be kept informed of the state of the finances as the work progresses.

In making this recommendation, I must admit I have found the utmost difficulty in putting it into operation and seeing the matter through to a satisfactory conclusion. It is, however, a matter involving all parties to the contract, and with good will and by constant endeavour it should be possible to deal in this manner with all major issues, leaving minor matters to be picked up later. I would specially include all sub-contractors in this suggestion, especially heating and electrical contractors. It is, of course, much to be preferred that this important work shall be done by the quantity surveyor and the contractor's surveyor working side by side, and appointments to do so should enjoy a substantial measure of priority.

I feel it is hardly reasonable for the contractor to leave to the quantity surveyor the task of the preparation of the final account and then to check and query it if it is not clear or the total is unsatisfactory. It is true there is some ambiguity about the R.I.B.A. Form of Contract on this point for this document says: "The surveyor shall measure and value all variations and shall give to the contractor an opportunity to be present and take all necessary notes, etc." Personally I take this to indicate the collaboration I spoke of, but it is not always interpreted so.

There is no doubt that the valuation of extra items not in accordance with the contract is greatly facilitated if job costing is resorted to during the conduct of the work. This is primarily the contractor's task, but the quantity surveyor should check and observe any such operation as is likely to serve as the basis of pricing an item in the variation account.

All contracts of magnitude have carried a variation of price clause for some years past, and this has entailed a great deal of administrative work on the part of the contractor and quantity surveyor. To adjust the differences in cost of wages it is necessary to examine and check every wage sheet and compute thereon the additional cost chargeable to the client, a matter embracing not only wage rates but travelling time, overtime and a host of other considerations. The adjustment of price for increased or decreased cost of material involves the production and checking of all invoices for materials the subject of the claim, and this may involve considerable delay in arriving at a final settlement. The adjustments are made from basic rates declared in the contract documents.

It is sometimes argued that this procedure relieves the contractor of the consequences of failure to purchase in the cheapest market, and this may be so, but in times of uncertainty as to continuity of values it is a fair clause to insert in a contract, though its administration is lengthy, sometimes troublesome, and expensive administratively. We must hope that all need for it will soon pass.

One item in the adjustment of accounts which has been much more prominent in war than in peace has been the submission by the contractor at the end of the contract of a series of claims on special grounds for reimbursement of large sums of money, such claims being based upon assertions that in one form or another the contract was carried out under quite different conditions to those envisaged at the outset—such differences not being under the contractor's control. I am quite sure that the private building owner will not view such claims with favour, and by far the best way to avoid them is the pre-contract production of an accurate bill of quantities. At this point, I would observe that in deciding on the form of contract it is necessary to bear in mind that a fair contract is a prerequisite to a fair settlement. Experience shows that the cheapest price and quickest result is obtained by giving time at the outset to the preparation of all essential contract documents.

In our post-war contracts we shall be searching for economy, and the more complete the contract particulars the nearer we shall get to our goal. We must not expect static conditions but be ready to adapt our principles to changing conditions as, indeed, has been done during the war.

Conclusion.

In dealing with this subject to-night I have drawn freely upon the Report of the Central Council of the M.O.W. entitled "The Placing and Management of Building Contracts," and various reports and transactions of the Chartered Surveyors' Institution. I must admit I have dealt with this subject from the basis of practice on the highest level, and in this work-a-day and imperfect world it is not always given to us to achieve our ideals, but I am sure we shall all go on striving to attain the heights of perfection.

Let us determine to deal with these subjects with fairness and equity to all concerned, and our difficulties attendant on each case will be dissolved by the goodwill created to the inestimable advantage

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DISCUSSION.

Questions were asked and answered. One was whether Mr. Harris would favour the imposition of a penalty on the building owner in addition to the cost of the variations when these were made.—Mr. Harris: I do not see just how you could impose it. Do you mean the imposition of a definite penalty? Surely he penalises himself? He causes additional costs and he has to pay these, and if one building owner while being the cause of such additional cost should by any means escape the penalty of paying it, the cost is spread over the rest of the building owners. Sooner or later the cost is met. I do not know of any precise way in which you could penalise a building owner in that way, and I do not honestly think it would be very desirable. It is far better that he should be educated up to the point when he himself realises the very real need to have particulars and requirements cut and dried before he enters into a contract.

Another questioner raised a point about a complete revaluation scheme for an accurate bill of quantities. Speaking recently to an architect who had done a tremendous amount of work in Scotland, he had been told that the usual procedure there was a complete remeasurement, even with the full and accurate bill of quantities. In his (the speaker's) own personal experience he had always found that a complete remeasurement was the shortest and best way out.—Mr. Harris: If you have an accurate bill of quantities it is quite right and proper to test the variations, but to indulge in a complete remeasurement would be quite insensate.

The next question was, in view of the fact that there were very many buildings in London seriously war damaged, did Mr. Harris think it possible for any quantity surveyor to produce such a very fine bill of quantities as to make it possible for the builder to put a fair and reasonable estimated value against items, allowing the builder to get work at a reasonable and fair cost?—Mr. Harris replied that this was too general a question to answer with precision. Each case must be determined on its merits. In the case of a war-damaged building, if the information was there to make it possible to compile a bill of quantities he would recommend that this be done, and he saw no hardship on the contractor in being asked to price it. He believed it was the intention of the War Damage Commission to engage in firm-price contracts for all small works of reparation.

A member of the audience, who described himself as "a small but honest builder," complained that whereas the architect took six months to design a plan, and the quantity surveyor took three months to prepare the bill of quantities, the builder had to turn out his draft in a week or ten days. He ought to be given more time. Another point, Why was not profit allowed on overtime and other extras?

Replying to the second question, Mr. Harris said the principle of reimbursement was that of a protection to the contractor at the time of entering into the contract, and the whole principle of that protective clause was that it should be a net reimbursement for movements of price beyond the contractor's control. If profit was added to this there would be a great deal of pressure to do away with the protective covenant and leave the contractor to the mercy of the market. On the other point, Mr. Harris said that very rarely did the surveyor get two or three months to prepare a bill of quantities, and very rarely did the architect get six months for plans and drawings. If the building owner could be convinced that he would get his building no later, and decidedly more cheaply by allowing his professional consultants time to do their work thoroughly and completely, the builder also would get more time.

Another questioner asked as to the desirability of limiting the number of contractors invited to tender for lump-sum contracts.—Mr. Harris said this was highly desirable, and he hoped the old time list of perhaps thirty tenders was a thing of the past. The recommended procedure was that the professional men involved should advise the building owner upon the contractors to tender, and in all public work that the local authority should advertise asking builders who desire permission to tender to submit their names. From the list of those who applied the professional advisers of the local authority extracted a short list to submit to the local authority for tendering purposes. It was not essential that the local authority should accept the lowest tender.

A question was asked as to the possibility of the contractor making a saving. If he had the opportunity of buying material at less than the basic price and seized that opportunity he had to pass the benefit on to the building owner.—Mr. Harris replied that if there was a fall in the price of materials it was part of the contract that the benefit should go to the building owner. The contract took account of decreases as well as increases in price. The quantity surveyor, when adjusting the matter, saw all the invoices: if these were correct and there was nothing withheld there was no difficulty.

The questioner cited a case where at the time the tender was submitted the basic price for hard core might be ten shillings a yard. This might remain the normal market price, but the builder might possibly get some hard core at half that price; and in a case like that it was rather hard to have to pass the saving on to the building owner.—Mr. Harris: I cannot accept that. If a contractor has an up and down clause it must be honoured and the figures adjusted, not from a market price of vague and indefinite kind but from the precise invoices from the job.

*** This completes the series. Previous lecturers and the dates on which their lectures were printed in *The Builder*, are: Mr. H. C. Harland (June 8), Mr. R. M. Wynne-Edwards (June 15), Mr. J. W. Stephenson (June 29) and Mr. Nigel Hannen (July 6).

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DISPOSAL OF SURPLUS BUILDERS' MATERIALS

M.O.W. JOINT COMMITTEE.

In accordance with the Government White Paper on Disposals (Cmd. 6539), the Minister of Works has formed a Joint Advisory Committee to determine policy and procedure for the disposal of builders' material in the hands of the Government in consultation with the industry. The National Council of Building Material Producers, the Distributors of Builders' Supplies Joint Council, and the National General Export Merchants' Group are represented on this Committee, which meets under the chairmanship of an officer of the Ministry of Works, and with which the final decision on all questions rests.

Representatives of the manufacturers and distributors concerned with each category or group of goods will be invited to form Trade Committees to present the views of the industry on the disposal matters with which they are concerned and to submit recommendations to the Joint Advisory Committee.

Invitations have been issued to the following bodies to nominate representatives to sit on Trade Committees to deal with water, gas and drainage goods and with builders' castings:—

Asbestos Cement Manufacturers' Association,
Asbestos Cement Industry Operating Committee,
British Bath Manufacturers' Association,
British Ironfounders' Association,
British Fitting Manufacturers' Association,
British Malleable Tube Fittings Association,
British Valve Manufacturers' Association,
Cast Iron Heating Boiler and Radiator Manufacturers' Association, Ltd.,
Cast Iron Pipe Association,
Conference of Gas Stove Manufacturers,
Gas List Tube and Fittings Association,
Gas List Tubular and Fitting Makers' Association,
Gutter Bracket Manufacturers' Association,
Heating Industrial and Export Group,
Large Tube Association,
Range Boiler Makers' Association, Ltd.,
Steel Gutter and Pipe Association.

The two Trade Committees concerned will hold a joint meeting at the Ministry of Works on Friday, July 20, under the chairmanship of an officer of the Department. These Committees will deal with:—

Water, Gas and Drainage Group.—Asbestos, cast iron, steel or wrought iron; rainwater pipes and fittings; gutters and fittings; soil, flue, smoke, and hot-water pipes and fittings; underground pipes and fittings; gutter brackets.

Builders' Castings Group.—Manhole covers, fresh-air inlets, manhole steps, cast-iron gratings, cast-iron brackets, ventilators and air-bricks, gulley gratings, C.I.P.E. baths, cast-iron fireplaces, ranges and heating stoves, cast-iron radiators, cast-iron fires, sectional and domestic boilers, gas cookers, back boilers, furnace pans, greenhouse boilers (excluding canteen types).

The Ministry of Works proposes to set up other committees shortly to discuss the disposal of other groups of builders' materials, which will include brick, tile and clay goods, cement and concrete goods, sanitary ware, manufactured sheet-metal goods, felt, window and glazing materials, non-ferrous goods, wallboards, timber goods, builders' ironmongery, and other items.

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st JULY, 1945.

(Every endeavour is made to ensure accuracy, but we cannot be responsible for errors)

	Crafts-men.	Lab-ourers.
Aberavon	2/2	1/9
Aberdare	2/2	1/9
Abergavenny	2/2	1/9
Abingdon	2/0½	1/7½
Accrington	2/2	1/9
Aldeburgh	2/0	1/7½
Aldershot District	2/0½	1/7½
Alfreton U.D.	2/2	1/9
Alnwick	2/1½	1/8½
Altrincham	2/2	1/9
Amble	2/1½	1/8½
Amersham	2/0½	1/7½
Ammanford	2/2	1/9
Andover	2/0	1/7½
Ardingly	2/0	1/7½
Arundel	2/0	1/7½
Ascot	2/0	1/7½
Ashby-de-la-Zouch U.D.	2/2	1/9
Ashford (Kent)	2/0	1/7½
Ashford (Middlesex)	2/2	1/9
Ashington	2/1½	1/8½
Ashtead	2/2	1/9
Ashton-under-Lyne	2/2	1/9
Aylesbury	2/0	1/7½
Aylsham	2/0	1/7½
Bagshot	2/0	1/7½
Banbury	2/0	1/7½
Barnsley	2/2	1/9
Barnstaple	2/0	1/7½
Barrow-in-Furness	2/2	1/9
Barry	2/2	1/9
Basingstoke	2/0	1/7½
Bath	2/1½	1/8½
Batley	2/2	1/9
Beaconsfield	2/0½	1/7½
Beccles	2/0	1/7½
Bedford	2/1½	1/8½
Berkhamsted	2/0	1/7½
Berwick District	2/1½	1/8½
Beverley	2/2	1/9
Bexhill	2/0½	1/7½
Bideford	2/0	1/7½
Biggleswade	2/0	1/7½
Billericay	2/1	1/8
Birchington	2/0	1/7½
Birkenhead	2/3½	1/10
Birmingham C.B.	†2/2	†1/9
Bishop Auckland	2/2	1/9
Bishop's Stortford	2/1	1/8
Blackburn	2/2	1/9
Blackpool	2/2	1/9
Blyth	2/2	1/9
Bognor Regis	2/0	1/7½
Bolton	2/2	1/9
Bournemouth(District)	2/1	1/8
Bracknell	2/0	1/7½
Bradford	2/2	1/9
Bradford-on-Avon	2/0	1/7½
Braintree	2/0	1/7½
Brentwood	2/1½	1/8½
Bridgwater	2/0½	1/7½
Bridlington	2/1½	1/8½
Brighouse	2/2	1/9
Brighton	2/1	1/8
Bristol	2/2	1/9
Broadstairs	2/0	1/7½
Bromsgrove U.D.	2/1½	1/8½
Buckley	2/2	1/9
Bungay	2/0	1/7½
Burnham-on-Crouch	2/0	1/7½
Burnley	2/2	1/9
Burslem	2/2	1/9
Burton-on-Trent C.B.	2/2	1/9
Bury	2/2	1/9
Bury St. Edmunds	2/0	1/7½
Buxton	2/1½	1/8½
Byfleet	2/0½	1/7½
Cambridge	2/2	1/9
Canterbury	2/0	1/7½
Cardiff	2/2	1/9
Carlisle	2/2	1/9
Carnforth	2/2	1/9
Castleford	2/2	1/9
Caterham	2/2	1/9
Chard	2/0	1/7½
Chatham	2/1	1/8
Chelmsford	2/1½	1/8½
Cheltenham	2/1	1/8
Chepstow	2/1½	1/8½
Chertsey	2/1	1/8
Chester	2/2	1/9
Chesterfield M.B.	2/2	1/9
Chichester	2/0	1/7½
Chorley	2/2	1/9
Cirencester	2/0	1/7½
Clacton	2/0	1/7½
Cleveleys	2/2	1/9
Clitheroe	2/2	1/9
Cobham (Surrey)	2/1	1/8
Colchester	2/1½	1/8½
Colwyn Bay	2/1	1/8
Congleton	2/1½	1/8½
Coventry C.B.	2/2	1/9
Cranbrook	2/0	1/7½
Cranleigh	2/0	1/7½
Crawley (Sussex)	2/0	1/7½
Crewe	2/1½	1/8½
Cromer	2/0	1/7½
Crowborough	2/0	1/7½
Cuckfield	2/0	1/7½
Darlington District	2/2	1/9
Darwen	2/2	1/9
Daventry M.B.	2/0½	1/7½
Deal	2/0	1/7½
Denbigh Town	2/1	1/8
Derby C.B.	2/2	1/9
Devizes	2/0	1/7½
Dewsbury	2/2	1/9
Didcot	2/0	1/7½
Diss	2/0	1/7½
Doncaster	2/2	1/9
Dorchester	2/0	1/7½
Dorking	2/0½	1/7½
Dover	2/0	1/7½
Dovercourt	2/0	1/7½
Driffield	2/0½	1/7½
Droitwich M.B.	2/1½	1/8½
Dudley M.B.	2/2	1/9
Dunstable	2/0½	1/7½
Durham City	2/2	1/9
Eastbourne	2/1	1/8
E. Glam. (Mon. Val.)	2/2	1/9
East Grinstead	2/0	1/7½
Edenbridge	2/0	1/7½
Ely	2/0	1/7½
Epping	2/2	1/9
Exeter	2/1½	1/8½
Exmouth	2/0½	1/7½
Fakenham	2/0	1/7½
Falmouth	2/0½	1/7½
Fareham	2/1	1/8
Faversham	2/0	1/7½
Felixstowe	2/1	1/8
Filey	2/0½	1/7½
Fleetwood	2/2	1/9
Flint	2/2	1/9
Folkestone	2/0	1/7½
Frinton	2/0	1/7½
Frome	2/0	1/7½
Gainsborough U.D.	2/1	1/8
Gateshead	2/2	1/9
Gillingham (Kent)	2/1	1/8
Glossop	2/2	1/9
Gloucester	2/1½	1/8½
Godalming	2/0	1/7½
Goole	2/2	1/9
Gosport	2/1½	1/8½
Grantham M.B.	2/1	1/8
Gravesend	2/1½	1/8½
Great Yarmouth	2/0	1/7½
Grimsby	2/2	1/9
Guildford	2/0	1/7½
Guilsborough	2/0½	1/7½
Halifax	2/2	1/9
Hanley	2/2	1/9
Harpenden	2/1	1/8
Harrogate	2/2	1/9
Hartlepools	2/2	1/9
Harwich	2/0	1/7½
Haslemere	2/0	1/7½
Hastings	2/0	1/7½
Hatfield	2/1½	1/8½
Haywards Heath	2/0	1/7½
Hednesford	2/1½	1/8½
Hemel Hempstead	2/1	1/8
Henley-on-Thames	2/0	1/7½
Hereford	2/0	1/7½
Herne Bay	2/0½	1/7½
Hertford	2/1½	1/8½
Heysham	2/2	1/9
Hitchin	2/1	1/8
Hoddesdon	2/1½	1/8½
Holt (Norfolk)	2/0	1/7½
Horley	2/0	1/7½
Horsham	2/0	1/7½
Horwich	2/2	1/9
Huddersfield	2/2	1/9
Hull	2/2	1/9
Hunstanton	2/0	1/7½
Huntingdon	2/0	1/7½
Ilfracombe	2/0	1/7½
Ingatestone	2/0½	1/7½
Ipswich	2/1½	1/8½
Isle of Thanet	2/0	1/7½
Isle of Wight	2/2	1/9
Keighley	2/2	1/9
Kenilworth U.D.	2/2	1/9
Kettering M.B.	2/2	1/9
Kidderminster M.B.	2/1½	1/8½
King's Lynn	2/0	1/7½
Kirkham	2/2	1/9
Knowle	2/1½	1/8½
Lancaster	2/2	1/9
Leamington M.B.	2/2	1/9
Leatherhead	2/1	1/8
Leeds	2/2	1/9
Leicester C.B.	2/2	1/9
Leighton Buzzard	2/0½	1/7½
Letchworth	2/1	1/8
Lewes	2/0	1/7½
Lichfield M.B.	2/1	1/8
Lincoln C.B.	2/2	1/9
Littlehampton	2/0	1/7½
Liverpool	2/3½	1/10
Llandudno	2/1	1/8
Llanelly	2/2	1/9
London—		
12 m. radius	2/3½	1/10
12-15 m. radius	2/3	1/9½
Long Eaton U.D.	2/2	1/9
Longton	2/2	1/9
Loughborough M.B.	2/2	1/9
Louth M.B.	2/0½	1/7½
Lowestoft	2/0	1/7½
Luton	2/1½	1/8½
Macclesfield	2/1½	1/8½
Maidenhead	2/1	1/8
Maidstone	2/0½	1/7½
Malvern U.D.	2/0½	1/7½
Manchester	2/2	1/9
Manningtree	2/0	1/7½
Mansfield M.B.	2/2	1/9
March	2/0	1/7½
Margate	2/0	1/7½
Market Harborough	2/1	1/8
Matlock U.D.	2/0½	1/7½
Melton Constable	2/0	1/7½
Melton Mowbray	2/1	1/8
Merthyr	2/2	1/9
Middlesbrough	2/2	1/9
Middleton	2/2	1/9
Middlewich	2/1½	1/8½
Milford Haven	2/0½	1/7½
Morecambe	2/2	1/9
Morley	2/2	1/9
Mundesley	2/0	1/7½
Nantwich	2/1½	1/8½
Nelson	2/2	1/9
Newark-on-Trent	2/1½	1/8½
Newbury	2/0	1/7½
Newcastle-on-Tyne	2/2	1/9
Newcastle-u.-Lyme	2/2	1/9
New Forest District	2/0	1/7½
Newmarket	2/0	1/7½
Newport, Mon.	2/2	1/9
Newport Pagnell	2/0	1/7½
Northampton C.B.	2/2	1/9
Norwich	2/2	1/9
Nottingham C.B.	2/2	1/9
Nuneaton M.B.	2/2	1/9
Oakham U.D.	2/0½	1/7½
Oldham	2/2	1/9
Ormskirk	2/2	1/9
Oxford	2/1½	1/8½
Oxted	2/0½	1/7½
Paignton	2/1½	1/8½
Peterborough (Borough)	2/1½	1/8½
Plymouth	2/2	1/9
Pontefract	2/2	1/9
Pontypridd District	2/2	1/9
Port Talbot	2/2	1/9
Portsmouth	2/1½	1/8½
Preston	2/2	1/9
Pulborough	2/0	1/7½
Ramsgate	2/0	1/7½
Reading	2/1½	1/8½
Redditch U.D.	2/1½	1/8½
Redhill	2/0½	1/7½
Ripon	2/0½	1/7½
Rochdale	2/2	1/9
Rochester	2/1	1/8
Rugby M.B.	2/2	1/9
St. Albans	2/1½	1/8½
St. Helens	2/2	1/9
St. Neots	2/0	1/7½
Saffron Walden	2/0	1/7½
Salisbury City	2/0	1/7½
Salisbury Plain	2/0	1/7½
Sawbridgeworth	2/0½	1/7½
Saxmundham	2/0	1/7½
Scarborough	2/1½	1/8½
Scunthorpe	2/2	1/9
Selby	2/2	1/9
Sevenoaks	2/0½	1/7½
Sheerness	2/0	1/7½
Sheffield	2/2	1/9
Shipley	2/2	1/9
Shoeburyness	2/1½	1/8½
Shoreham	2/1	1/8
Shrewsbury M.B.	2/1½	1/8½
Sittingbourne	2/0	1/7½
Skegness U.D.	2/1	1/8
Sleaford U.D.	2/0½	1/7½
Slough	2/1	1/8
Smethwick C.B.	†2/2	†1/9
Southampton	2/1½	1/8½
Southend-on-Sea District	2/1½	1/8½
Southport	2/2	1/9
South Shields	2/2	1/9
Spalding U.D.	2/0	1/7½
Stafford M.B.	2/1½	1/8½
Staines	2/1	1/8
Stamford M.B.	2/1	1/8
Stevenage	2/2	1/9
Stockport	2/2	1/9
Stockton-on-Tees	2/2	1/9
Stoke-on-Trent C.B.	2/2	1/9
Stourbridge M.B.	2/2	1/9
Stourport U.D.	2/1½	1/8½
Stowmarket	2/0	1/7½
Stratford-on-Avon M.B.	2/1	1/8
Stroud	2/1	1/8
Sunderland District	2/2	1/9
Sutton Coldfield M.B.	2/2	1/9
Swaffham	2/0	1/7½
Swanage	2/0	1/7½
Swansea	2/2	1/9
Swindon	2/0½	1/7½
Tamworth M.B.	2/1½	1/8½
Taunton	2/0½	1/7½
Tenterden	2/0	1/7½
Thames Haven	2/2	1/9
Thetford	2/0	1/7½
Thorpe Bay	2/1½	1/8½
Todmorden	2/2	1/9
Tonbridge	2/0½	1/7½
Torquay	2/1½	1/8½
Totnes	2/0	1/7½
Trowbridge	2/0	1/7½
Truro	2/0	1/7½
Tunbridge Wells	2/0½	1/7½
Uppingham (Salop)	2/1½	1/8½
Uttoxeter U.D.	2/0½	1/7½
Wakefield	2/2	1/9
Walsall C.B.	2/2	1/9
Walsden	2/2	1/9
Walton-on-Naze	2/0	1/7½
Ware	2/1½	1/8½
Warminster	2/0	1/7½
Warrington	2/2	1/9
Warwick M.B.	2/2	1/9
Wellington R.D.	2/1½	1/8½
Welwyn	2/1	1/8
Welwyn Gar. City	2/2	1/9
Wells (Norfolk)	2/0	1/7½
West Bromwich C.B.	2/2	1/9
Westcliff-on-Sea	2/1½	1/8½
Weston-super-Mare	2/1	1/8
Weybridge	2/1	1/8
Weymouth	2/0	1/7½
Whitby	2/1	1/8
Whitstable	2/0	1/7½
Widnes	2/2	1/9
Wigan	2/2	1/9
Wigton	2/0½	1/7½
Willington	2/2	1/9
Wilmslow	2/2	1/9
Winchester	2/0½	1/7½
Windermere	2/0½	1/7½
Windsor	2/1	1/8
Wisbech	2/0	1/7½
Witham	2/0	1/7½
Woking (District)	2/0½	1/7½
Wokingham	2/0	1/7½
Wolverhampton C.B.	2/2	1/9
Woodbridge	2/0	1/7½
Worcester C.B.	2/1½	1/8½
Workington	2/0½	1/7½
Worksop	2/1½	1/8½
Worthing	2/0	1/7½
Wrexham	2/1½	1/8½
Wroxham	2/0	1/7½
Wycombe	2/1	1/8
Wymondham	2/0	1/7½
Yeovil	2/0½	1/7½
York	2/2	1/9

† Plus 2d. per working day.

NOTE.—Carpenters, Joiners and Plumbers in all Towns and Districts receive 2d. per day Tool Allowances.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged on craft processes is 1/7½ per hour. Women introduced to carry out work other than craft processes, 1/4 per hour.

HOUSING AND SKILLED LABOUR

F.M.B. SPEAKER CRITICISES SLOW DEMOBILISATION.

"If the building industry is to help in the Government's housing programme, the Government must co-operate with the industry. This is particularly true in regard to the release of building labour from the Forces. The present position is that employers and Tommies are equally afraid to apply for release under Class B." This statement was made by MR. NOEL LANDAU at a quarterly luncheon of the Federation of Master Builders at the Connaught Rooms, on July 10, when Mr. J. H. Heal, J.P., took the chair, and Mr. H. U. Willink (Minister of Health) was the guest of honour.

Mr. Landau, who urged the taking of a realistic view of the labour situation, continued: "I hope Mr. Willink will take steps to see that the 'frills' which bind the operatives in the Forces are dispensed with so that men can be released for the war on bad and insufficient housing—a war no less important than the Japanese war. If Mr. Willink wants to know why the Class B men do not seek release, then we can tell him. The three main reasons are the possibility of losing their war service gratuity, the possibility of losing their end-of-service leave, and, third, the likelihood of their being directed to some other employer." The speaker offered an opinion that if the public—among whom would be many ex-Servicemen, were to be induced to buy houses, then something more was needed than the £200 subsidy which had been mentioned in a house costing £1,200, which, pre-war, was valued at £450. Another matter of equal importance to the provision of new houses was the maintenance of existing houses. Houses should be kept in a state of fit habitation and builders should be allowed to get on with that job of work.

MR. WILLINK, in an address, outlined the Government's plans for housing and building. The goal, he said, was a good house for every family that wanted one, and the immediate target of 220,000 permanent houses built and 80,000 building in two years (that took no account of 150,000 or more temporary houses) was only a first objective; if it were reached in advance of time the Government would not pause there. "Private enterprise," continued the Minister, "built three-quarters of the houses put up in this country between the wars. I am sure we can confidently count again on the full effort of all agencies of free enterprise."

A Simplified Licensing Scheme.

Explaining the licensing scheme for the building of small houses, Mr. Willink said that the builder could get an application form either from the local authority of his area or from the Regional Licensing Officer. He would fill it in and submit it to the local authority, which had been instructed, if the proposed house had not already been approved under the by-laws, to take the application for licence also as an application for that approval. When the local authority got the application they would consider it by reference to the conditions as to size and selling price and the builder's readiness to make an immediate start. "I have told local authorities that where private builders have sites ready I look to them to use their best endeavours to enable an early start to be made." There might shortly remain unused a considerable amount of suitable labour in the hands of unsuccessful tenderers or builders not in a position to tender, and he had suggested to local authorities that where they had sites ready and considered that a number of houses additional to those covered by accepted tenders could be built, they should consider negotiating contracts with local builders at agreed prices.

Subsidy for Private Builders.

Enlarging upon the Government's plan for subsidy, Mr. Willink stated that if the present Government were returned to power it intended to introduce legislation without delay to settle the subsidy payable on houses built by private enterprise and gave the assurance that the subsidy scheme would be extended to include the builder who put up houses for letting himself. Such proposals from builders would be welcomed by him (the Minister). The Government also intended to provide in the Bill that the owner-occupier or purchaser of a house begun under a licence issued under the scheme previously mentioned before the passing of the Act should not be prejudiced by reason of his early start.

The task ahead was great; in it we must never forget quality in the undeniable need for quantity. "I appeal to all concerned—building employers, building operatives, local authorities, and all who can speed the work—to tackle it with the same zeal and spirit that served us so well in 1940."

MR. J. H. HEAL, who had introduced Mr. Willink, paid a tribute to the late President, Mr. Charles Boot, which was endorsed later by Mr. Willink, and in a moving address by Mr. R. Coppock. Mr. Heal also pressed for the return of labour from the Forces. "We are told it is being released, but it is not so—at any rate not in any quantity. We can find instances of skilled men kicking their heels in camp and cook-house when they should be engaged in the rehousing campaign."

"THE BUILDER" PRICES AND WAGES

Until further notice and in order to devote more space to news, *The Builder* copyright "Prices Current of Materials" will be given in the first issue of each month only. Current changes will be given weekly as they occur. Rates of wages normally appear each week.

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THE SCOTTISH BUILDER

NEW BUILDINGS

BO'NESS.—T.C. to erect 200 permanent houses at southern boundary of the town.

DUNFERMLINE.—T.C. considering draft plans for crematorium, at £22,110.

MONTROSE.—T.C. to proceed with erection of 50 four-apartment houses of cottage type.

PAISLEY.—T.C. received approval of Department of Health for Scotland for construction of further 40 houses at Fergushe and 100 houses at Gallowhill.

FUTURE CONSTRUCTION

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JULY 24.

†Gateshead T.C.—82 houses, Highfield estate. B.E. Dep. £2 2s. Tenders by August 14.

JULY 25.

Lichfield R.D.C. — Erection of (a) 16 old persons' bungalows, Park-rd., Chase-ter.; (b) 20 houses, Rugeley-rd., and High-st., Chase-ter.; (c) 12 houses on various sites; (d) 4 houses at Comberford. J. G. Rimand, Council House. Dep. £2 2s.

JULY 27.

†Border R.D.C.—3 pairs of houses and site works for temporary houses. Housing Officer, Council Offices, 5-7, Victoria-pl., Carlisle.

Hackney B.C.—Rebuilding of (a) 9 terraced houses at Gunton-rd.; (b) 1 terraced house at Cleveleys-rd.; (c) 4 maisonettes (one block) at Rock-rd. W. G. H. Goodwin (L.), Housing Manager, Town Hall, Hackney, E.8. Dep. £2 2s. each contract.

†Stockport C.B.—Erection of 18 flats, Didsbury-rd. B.S.

York T.C.—Repairs and adaptations at 132, The Mount. City E. and A. Dep. £1.

JULY 28.

Birkenhead T.C.—Re-erection of 31 houses (pre-war construction). B.E. and S. Dep. £2 2s.

Birkenhead T.C.—Conversion of No. 18, Rock Park into 4 self-contained flats. B.E. and S.

†*Smethwick C.B.—102 three-bedroom houses and 32 "Duplex" houses. B.E. and S. Dep. £2 2s. Tenders by August 25.

Stourbridge T.C.—Erection of 58 houses and 4 bungalows at Birmingham-st.-Junction-rd. estate (Part 2). G. N. Maynard, A.M.Inst.C.E., B.E. and S. Dep. £3 3s.

JULY 30.

Atcham R.D.C.—Erection of 6 houses at Longden. S., 24, St. John's-hill, Shrewsbury.

Cumberland C.C.—Conversion of disused hospital block at Penrith Institution into staff quarters. J. H. Haughan, County A., 4, Alfred-st. North, Carlisle.

Dalton-in-Furness U.D.C.—Extensions and alterations to ambulance garage. S.

†*Wanstead and Woodford B.C.—32 flats and 14 semi-detached houses, Vicarage-rd. Plans on view at Tooley and Foster, architects, Midland Bank-chbrs., Buckhurst Hill, Essex. Applications to T.C. Dep. £2 2s.

JULY 31.

***Biggleswade R.D.C.**—28 houses in four parishes. F. C. Levitt, Architect, Market-sq., Biggleswade.

Kiveton Park R.D.C.—Erection of 92 houses in 6 parishes. S. Dep. £2 2s.

St. Ives R.D.C.—Five pairs of houses at Warboys. Lea and Milner, Architects, 4, Market Hill, Huntingdon. Dep. £1 1s.

AUGUST 1.

Cranbrook R.D.C.—12 houses at Milkhouse, Sissinghurst. C., Council Offices.

†Ruislip-Northwood U.D.C. — Rebuilding 6 houses at Addison-way, Northwood. E. and S. Dep. £2.

Weymouth and Melcombe Regis B.C.—Demolition of communal shelters. B.E. and S.

AUGUST 2.

Sunderland C.B.—Erection of 34 "Duplex" houses, 38 five and six-person houses in terraces, and 28 five-person semi-detached houses at Springwell Farm estate. B.E. and S. Dep. £2 2s.

AUGUST 3.

***Beds C.C.**—Structural alterations, renovation work, etc., at Seagrave Hall. County Architectural Dept., Shire Hall, Bedford. Dep. £2 2s.

AUGUST 7.

Belper R.D.C.—42 permanent houses on 4 sites. Building S. Dep. £2 2s.

***Hayes and Harlington U.D.C.**—Rebuilding 7 houses at Botwell housing estate. C. Dep. £2 2s.

Wakefield R.D.C.—Erection of 26 houses. S., 18, St. John's Mount, Wakefield. Dep. £1 1s.

AUGUST 8.

Newcastle-under-Lyme T.C.—101 houses at Beasley Farm estate. T.C. Dep. £2 2s.

AUGUST 13.

***Salford T.C.**—14 houses at Gerald-rd. estate. City E. Dep. £2 2s.

Whitby U.D.C.—Reinstatement of 2 steel and timber footbridges at Whitby Harbour. Lewis and Duvivier, 42, Grosvenor-gdns., Westminster, S.W.1. Dep. £2 2s.

AUGUST 18.

***Gillingham T.C.**—2 houses at School-ave. and 3 houses at Fourth-ave. B.S. Dep. £2 2s.

AUGUST 20.

***Bethnal Green B.C.**—Erection of 18 tenements as extension to Digby estate. H. C. Monson (F.), Finsbury Pavement House, 120, Moorgate, E.C.2. Dep. £5.

***Bethnal Green B.C.**—Rebuilding 6 flats and execution of certain works to existing buildings adjacent thereto at Vaughan estate. T.C. Dep. £3 3s.

AUGUST 27.

***Chester T.C.**—16 permanent type brick houses at St. Mark's-rd. City E. and S. Dep. £2 2s.

AUGUST 31.

***Hove T.C.**—54 houses at The Knoll. B.S. Dep. £3 3s.

***Solihull U.D.C.**—53 three-bedroom houses at Redlands-rd. E. and S., 90, Station-rd. Dep. £5.

SEPTEMBER 8.

***Staveley U.D.C.**—90 brick-built houses at Station-rd., Barrow Hill. E. and S. Dep. £2 2s.

NO DATE.

Dundalk.—Erection of cinema. A. Edward Smith, F.S.I., 19, Upper Merrion-st., Dublin. Dep. £10 10s.

Haddington T.C.—12 houses at Herdmanflatt. Applications in writing to A. C. Stevenson, T.C., 55, High-st.

Montrose T.C.—50 houses, cottage type. B.S.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

JULY 27.

Southwell R.D.C.—External painting of 88 houses and 4 bungalows on various sites. S.

JULY 28.

Blofield and Flegg R.D.C.—External painting of 202 houses. Housing Manager, Council Offices, Acle.

Howden R.D.C.—Painting work at Infectious Diseases Hospital. K. Montgomery, San. Inspector, 1, St. John-st.

JULY 31.

Southport T.C.—External painting of Town Hall. B.E. Dep. £1 1s.

AUGUST 1.

Bury T.C.—Internal decoration at elementary schools. B.S.

AUGUST 13.

Thirsk R.D.C.—Painting 130 houses. Building S.

NO DATE.

West Riding C.C.—Internal renovations to schools at Bingley, etc. E. B. Nelson, Ed. Office, Bingley.

ROADS, SEWERAGE AND WATER WORKS

JULY 27.

Cardiff T.C.—Construction of approx. 800 lin. yds. of 36-in. dia. and 840 lin. yds. of 33-in. dia. concrete tube sewers. Also 3,200 lin. yds. of various stoneware sewers from 6 in. to 24 in. dia., and electrical sub-station and pumphouse. City E. Dep. £2 2s.

JULY 30.

Bognor Regis U.D.C.—Roads and sewers, Hatherleigh-gdns. E. and S. Dep. £2 2s.

Tottenham B.C.—Removal of tram track and resurfacing in asphalt at Seven Sisters-rd. B.E. and S. Dep. £2 2s.

Vaynor and Penderyn R.D.C.—Roads and sewers at Cefn Cold. E. J. H. Hughes, Architect and S., Council Offices, 25, Victoria-st., Merthyr Tydfil. Dep. £2 2s.

JULY 31.

Ashton-under-Lyne T.C.—Roads and sewers, Rowley-st. B.E. and S.

Blackwell R.D.C.—Footpaths at Langwith Junction site. L. I. Cockerham, Dale Close, 100, Chesterfield-rd. South, Mansfield.

AUGUST 1.

Buxton T.C.—Surfacing of roads. B.E.

Preston C.B.—Roads and sewers for 300 temporary houses at Grange estate, Ribbleton. B.E. and S. Dep. £2 2s.

PUBLIC APPOINTMENTS

*Full details of Public Appointments marked * are advertised elsewhere in this issue. Those marked † have been advertised in previous issues.*

JULY 25.

†Stratford-on-Avon R.C.—Temporary Architectural and Planning Assistant.

JULY 26.

***Scunthorpe T.C.**—Architectural Assistant.

JULY 27.

†Birmingham T.C.—(a) Assistant Architects; (b) Assistant Quantity Surveyors.

†Cardiff C.B.—Chief Building Inspector.

†Northern Ireland Government.—Temporary Assistant Quantity Surveyors.

***Weymouth and Melcombe Regis T.C.**—Architectural Assistants.

JULY 28.

†Croydon C.B.—Senior Architectural Assistant; General Architectural Assistant.

†Edinburgh and East of Scotland College of Agriculture.—Assistant Lecturer in Building Construction.

***Somerset C.C.**—(1) Class II Architectural Assistants; (2) Class II(a) Architectural Assistants; (3) Quantity Surveyors.

JULY 30.

†Malden and Coombe T.C.—Architectural Assistant.

JULY 31.

†Blackwell R.D.C.—Architectural Assistant.

†Miners' Welfare Commission.—6 Architectural Assistants.

†Newport C.B.—Assistant Architects.

***Oxford T.C.**—Senior Town Planning Assistant.

***Spalding R.D.C.**—Architectural Assistant.

†St. Thomas' Hospital.—Assistant Clerk of Works.

AUGUST 3.

***Denbighshire C.C.**—Architectural Assistants and Building Inspector.

***Sheffield T.C.**—6 Temporary Assistant Architects.

AUGUST 4.

***Bradford T.C.**—Two Assistant Architects.

***Derbyshire C.C.**—Architectural Assistant.

†Overseas Employment.—Quantity Surveyors for Controller of Development and Welfare, West Indies, Uganda Government P.W.D. Dept. and Gold Coast P.W.D. Dept.

AUGUST 6.

***Chadderton U.D.C.**—Architectural Assistant.

AUGUST 7.

***Barrow-in-Furness C.B.**—Deputy B.E. and S. and General Engineering Assistant.

AUGUST 11.

***Southampton C.B.**—Borough Architect.

AUGUST 25.

†Clackmannan C.C.—County Architect.

SEPTEMBER 1.

†Middleton T.C.—Housing Manager.

NO DATE.

***Barrow-in-Furness C.B.**—2 Temporary Clerks of Works.

***Leicester E.C.**—Full-time Teachers of Brickwork, Carpentry, Plumbing.

***Ministry of Town and Country Planning.**—(1) Planning Inspectors; (2) Assistant Regional Planning Officers.

***Norwich E.C.**—Teacher of General Building Subjects.

***Overseas Employment.** — Instructor for Uganda Government. Ed. Dept.

***Overseas Employment.**—Inspector of Works for Gold Coast. P.W.D.

***Overseas Employment.**—Inspector of Works for Nigerian Government.

***Surrey E.C.**—Lecturers for Evening Classes in Building Science and Builders' Quantities.

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TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Ashton-under-Lyme.—Erection of 30 temporary houses at Stockport-rd., Cambridge-st. and William-st., for T.C. A. T. Kemp, B.S.: *Pochin's (Manchester), Ltd., Castle-st., Knott Mill, Deansgate, Manchester 3.

Liverpool.—Repairs, etc., at Kirkdale Homes, for T.C.: *Wolfe & Rowlands, 54, Gloucester-pl., Anfield 6, £1,685.

Liverpool.—Offices and works at south side of Breckside Park: *Unit Construction Co., Ltd., Bentham-dr., Childwall, Liverpool 16.

Llangefni.—Erection of temporary bungalows at Bron-y-Craig Estate, for U.D.C. T. Alwyn Lloyd (F.), architect, 6, Cathedral-rd., Cardiff: *Ed. Jones, 3, The Arcade, Penmaenmawr, £5,085.

London.—Erection of three prefabricated huts and repairs at L.C.C. Brixton School of Building:—

H. J. Marston & Son, Ltd., S.W.6	£6,749
J. Garrett & Son, Ltd., S.W.12 (subject to material being available)	6,596
J. & C. Bowyer, Ltd., S.E.19	6,419
Truett & Steel, Ltd., Thornton Heath	6,387
E. Clarke & Sons, Ltd., Addlestone	6,150
Bridge Walker, Ltd., S.W.2	5,998
*William Harbrow, Ltd., 214, Rotherhithe New-rd., S.E.16	5,100

(The architect's comparable estimate is £6,210.)

¶London (Air Ministry).—List of contracts to value of £500 or over for week ended July 14:—

General maintenance work: A. N. Coles (Contractors), Ltd., Plymouth; John Hopkins (Building), Ltd., High Wycombe, Bucks.

Miscellaneous structural steelwork: Tees Side Bridge & Engineering Co., Ltd., Middlesbrough.

Maintenance of landing grounds: John Turney & Co., Bicester, Oxon.

Building work: Brazier & Son, Ltd., Southampton.

¶London (M.O.W.).—Contracts placed by M.O.W. during week ending July 5:—

London (Erection of Seco temporary houses): Paddington, Foster & Dicksee, Ltd., 1, Baker-st., London, W.1; Lewisham, Leightons (Contractors), Ltd., 10, Chandos-st., London, W.1; Wandsworth, Bridge Walker, Ltd., 91-3, Effra-rd., London, S.W.2; Willesden, A. Roberts & Co., Ltd., 74, Earls Court-rd., Kensington, London, W.8.

Berks (Erection of Seco temporary houses): Reading, Y. J. Lovell & Son, Ltd., High-st., Marlow, Bucks.

Cheshire (Preparation for housing sites): Ellesmere Port, J. W. Flather, Bleak House, Ellesmere Port; (Erection of Seco temporary houses): Birkenhead, Peak Construction Co., Ltd., 49, Hamilton-sq., Birkenhead.

Denbighshire (Preparation for housing sites): Wrexham, Whiteley Bros., Salisbury Park, Wrexham and J. W. Flather, Bleak House, Ellesmere Port.

Durham (Erection of school): Ferry Hill, Lawson & Boddy, Maude-st., Darlington; (Erection of Seco temporary houses): Darlington, H. Parvin & Son, 57, Bondgate, Darlington; (Erection of Tarran temporary houses): Sunderland, Robt. Hudson & Sons (Contractors), Ltd., St. Mark's-cres., Sunderland.

Essex (Erection of Arcon temporary houses): Brentwood, J. E. Rogerson, 1, Quadrant Arcade Offices, Romford.

Glamorganshire (Preparation for housing sites): Port Talbot, J. G. Cronk (Streatham), Ltd., 407a, Brighton-rd., Croydon; (Erection of new store buildings and adaptations to Building Trades Training Centre): Cardiff, W. E. Chivers & Son, Ltd., Devizes, Wilts; (Erection of Arcon temporary houses): Barry, A. N. Coles (Contractors), Ltd., Marshfield-rd., Castleton, Cardiff; Neath, Thos. Cole & Son, Ltd., Bridge-st.-chbrs., Neath, Glamorgan; Rhondda, A. N. Coles (Contractors), Ltd., Marshfield-rd., Castleton, Cardiff.

Hampshire (Erection of Seco temporary houses): Aldershot, H. T. Hill & Son, Ltd., Bridge-rd., Farnborough, Hants.

Kent (Erection of Seco temporary houses): Chatham, R. Hopkins & Sons, Central Station Approach, Gravesend, Kent; Northfleet, R. Hopkins & Sons, Central Station Approach, Gravesend, Kent.

Lanarkshire (Erection of Tarran temporary houses): Hamilton, McLean & Co., Ltd., 75, Glasgow-row, Wishaw.

Lancashire (Preparation for housing sites): Cheetham, Mertees Construction Co., Ltd., 25, Cross-st., Manchester 2; (Erection of Seco temporary houses): Liverpool, Frederick Clark & Sons, 191, Heyworth-st., Liverpool 5; (Erection of training centres): Speke, John Dickinson & Co. (Bolton), Ltd., Fairclough-st., Bolton, Lancs; Denton, J. Gerrard & Sons, Ltd., Swinton, Manchester.

Leicestershire (Erection of Tarran temporary houses): Leicester, Foster & Dicksee, Ltd., 84, James-st., Rugby; (Erection of Arcon temporary houses): Hinckley, J. Chapman & Sons, Ltd., Knighton Junction Works, Welford-rd., Leicester.

Lincolnshire (Preparation of housing sites): Lincolnshire area, M. J. Gleeson, Ltd., 822, Chesterfield-rd., Sheffield 8; (Erection of Seco temporary houses): Scunthorpe, R. M. Phillips & Son, Ltd., Estate Yard, Briggs.

Middlesex (Erection of Seco temporary houses): Ealing, Comben & Wakeling, Ltd., 603-5, Kenton-rd., Middlesex; Ruislip-Northwood, W. S. Try, Ltd., Cowley, Uxbridge; (Preparation of housing sites): Hayes & Harlington, Roads and Public Works, Ltd., Ruibuilder Works, Havelock-rd., Southall; (Erection of houses): Edmonton, F. Bradford & Co., Ltd., Angel-rd. estate, Edmonton, London, N.18.

Northamptonshire (Erection of Tarran temporary houses): Rothwell, R. K. Poskitt (Beal), Ltd., Beal, Goole, Yorks.

Northumberland (Erection of Tarran temporary houses): Arnold, Greenwoods (Mansfield), Ltd., 2, Wood-st., Mansfield; (Erection of Seco temporary houses), Nottingham, Sheriff & Co., Ltd. (1943), Gipsy-la. Works, Leicester; (Erection of Tarran temporary houses): Nottingham, W. S. Simms, Sons & Cooke, Ltd., Haydn-rd., Sherwood, Nottingham.

Somersetshire (Erection of central kitchen): Yeovil, D. R. Bunthorn & Son, Building Contractors, Glastonbury.

Staffordshire (Preparation for housing sites): Wednesbury, Currall Lewis & Martin, Ltd., 11, Booth-st., Handsworth, Birmingham 21; (Erection of Arcon temporary houses): Aldridge, Towers Wilson, Ltd., Woodthorne-rd., Tettenhall; Tettenhall, Wm. Whittenham, Powlett-st., Wolverhampton.

Sussex (Erection of Seco temporary houses): Lewis, Hoad & Taylor, Ltd., Market-sq., Horsham.

Warwickshire (Erection of Tarran temporary houses): Nuneaton, Forster & Dicksee, Ltd., 84, James-st., Rugby; (Erection of Seco temporary houses): Market Bosworth, Drury & Co., Ltd., Allen House, Newarke-st., Leicester; (Erection of Building Trades Training Centre): Yardley, Hinkins & Frewin, Ltd., Cranham-st., Oxford; (Preparation for housing sites): Leamington, E. H. Burgess, 34, Grosvenor-gdns., London, S.W.1.

Yorkshire (Erection of U.S.A. temporary houses): Sheffield, Vernon Dunk, Ltd., Summer-la., Barnsley, Yorks; (Erection of Tarran temporary houses): Doncaster, Bernard Pumfrey, Ltd., Wintern Works, Garlish-st., Gainsborough; (Erection of Seco temporary houses): Batley, Harrison Speensley & Sons, High-st., Morley.

¶**London (War Dept.).**—Works contracts placed by War Dept. for week ended July 7:—

Oxfordshire: Miscellaneous work, W. Norman & Son, Ltd., Birmingham 4.

Essex: Miscellaneous work, E. Scott Hale, Ltd., Romford, Essex.

Hampshire: Miscellaneous work, W. G. L. Sheppard, Guildford, Surrey; Henry T. Hill & Son, Ltd., Farnborough, Hants.

Sussex: Reinstatement of sea defences, E. Peckett & Sons, Ltd., Littlehampton, Sussex.

Sheffield.—Works for T.C. W. George Davies (F), City A. Rebuilding of houses at Manor Estate (7); Wybourn Estate (8); Greenhill Estate (4); *Reeves Charlesworth, Ltd., £5,892; *M. J. Gleeson, Ltd., 822, Chesterfield-rd., Woodseats, £6,589; *Cowley, Murfitt & Sons, Ltd., £3,140 (all of Sheffield).

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